GROUP 00

GENERAL

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HOW TO USE THIS MANUAL

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MAINTENANCE, REPAIR AND SERVICING EXPLANATIONS

This manual provides explanations, etc. concerning procedures for the inspection, maintenance, repair and servicing of the subject model. Unless otherwise specified, each service procedure covers all models. Procedures covering specific models are identified by the model codes, or similar designation (engine type, transaxle type, etc.). A description of these designations is covered in this manual under "VEHICLE IDENTIFICATION."

ON-VEHICLE SERVICE

The "ON-VEHICLE SERVICE" section has procedures for performing inspections and adjustments of particularly important components. These procedures are done with regard to maintenance and servicing, but other inspections (looseness, play, cracking, damage, etc.) must also be performed.

SERVICE PROCEDURES

The service steps are arranged in numerical order. Attention to be paid in performing vehicle service are described in detail in SERVICE POINTS.

DEFINITION OF TERMS

STANDARD VALUE

Indicates the value used as the standard for judging whether or not a part or adjustment is correct.

LIMIT

Shows the maximum or minimum value for judging whether or not a part or adjustment is acceptable.

REFERENCE VALUE

Indicates the adjustment value prior to starting the work (presented in order to facilitate assembly and adjustment procedures, and so they can be completed in a shorter time).

DANGER, WARNING, AND CAUTION

DANGER, WARNING, and CAUTION call special attention to a necessary action or to an action that must be avoided. The differences among DANGER, WARNING, and CAUTION are as follows:

- If a DANGER is not followed, the result is severe bodily harm or even death.
- If a WARNING is not followed, the result could be bodily injury.
- If a CAUTION is not followed, the result could be damage to the vehicle, vehicle components or service equipment.

TIGHTENING TORQUE INDICATION

The tightening torque indicates a median and its tolerance by a unit of N· m (in-lb) or N· m (ft-lb). For fasteners with no assigned torque value, refer to P.00-48.

SPECIAL TOOL NOTE

Only MMC special tool part numbers are called out in the repair sections of this manual. Please refer to the special tool cross-reference chart located at the beginning of each group, for the special tool number that is available in your market.

ABBREVIATIONS

The following abbreviations are used in this manual for classification of model types:

2.0L Engine:2.0 liter <4B11> engine, or a model equipped with such an engine.
MFI: Multiport fuel injection, or engines equipped with multiport fuel injection.
PCM: Powertrain control module
M/T:Indicates manual transaxle, or models equipped with manual transaxle.
CVT: Indicates the continuously variable transaxle.
FWD: 2-wheel drive vehicles.
SWS: Simplified wiring system
A/C: Air conditioning.

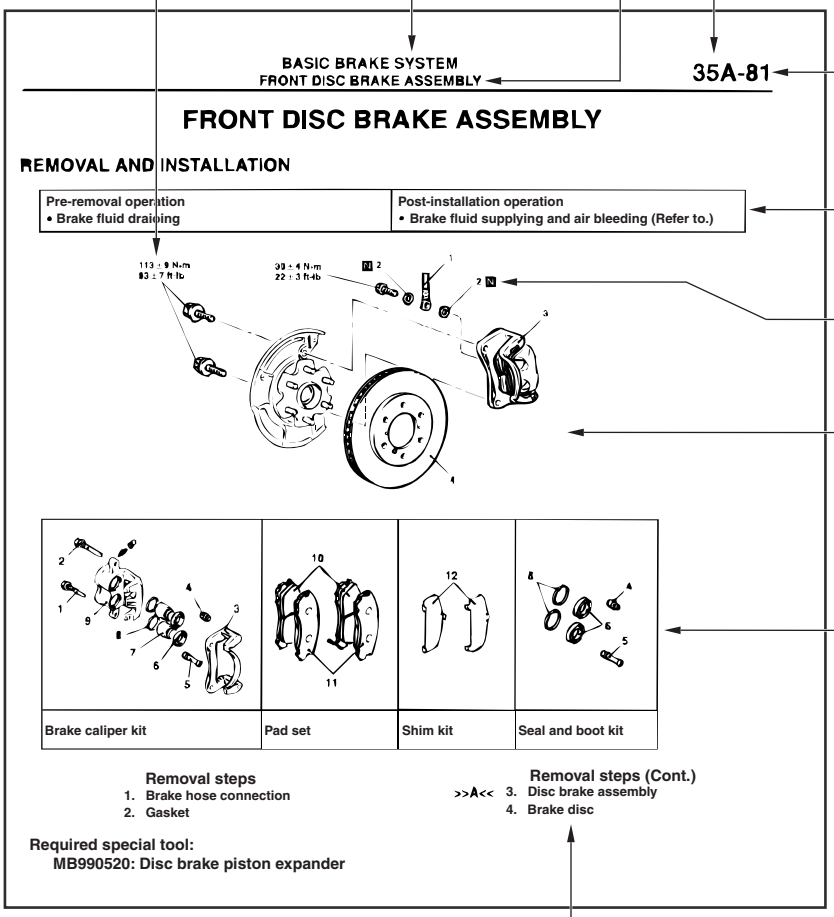
EXPLANATION OF MANUAL CONTENTS

Indicates the section title.

Denotes tightening torque. If there is no indication of tightening torque, refer to tightening torque.

Indicates the group title.

Indicates the group number.



Indicates the page number.

Indicates procedures to be performed before the work in that section is started, and procedures to be performed after the work in that section is finished.

Mark **N** denotes non-reusable part.

Component diagram
A diagram of the component parts is provided near the front of each section in order to give the reader a better understanding of the installed condition of component parts.

Repair kit or parts sets are shown.
(Only very frequently used parts are shown.)

Maintenance and servicing procedures

The numbers provided within the diagram indicate the sequence for maintenance and servicing procedures.

- Removal steps :
  The part designation number corresponds to the number in the illustration to indicate removal steps.
- Disassembly steps :
  The part designation number corresponds to the number in the illustration to indicate disassembly steps.
- Installation steps :
  Specified in case installation is impossible in reverse order of removal steps. Omitted if installation is possible in reverse order of removal steps.
- Assembly steps :
  Specified in case installation is impossible in reverse order of removal steps. Omitted if assembly is possible in reverse order of disassembly steps.

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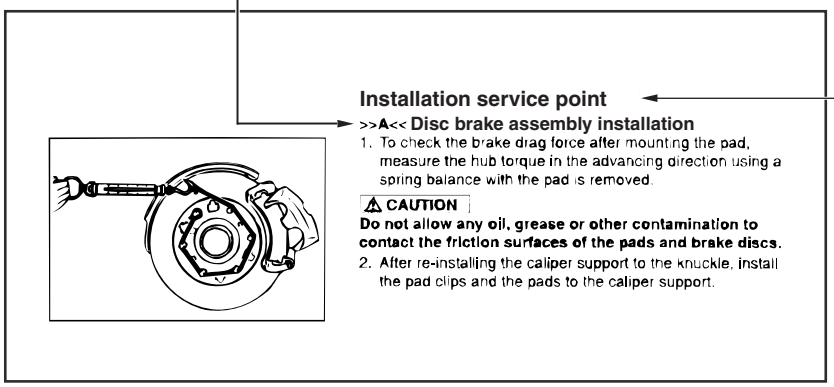
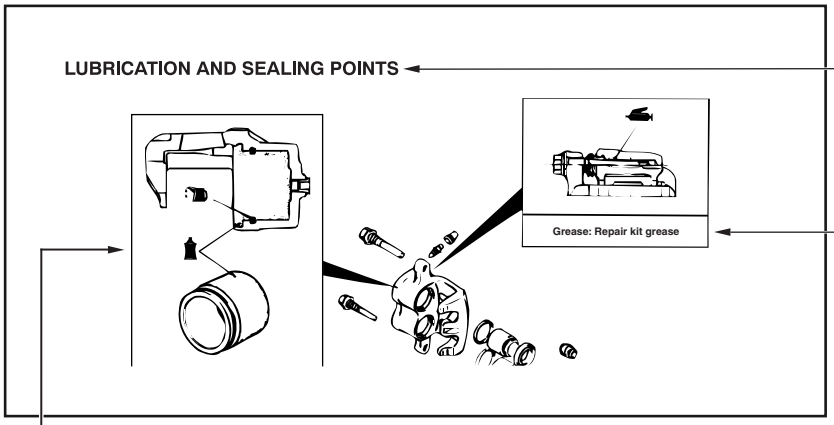
Classifications of major maintenance / service points

When there are major points relative to maintenance and servicing procedures (such as essential maintenance and service points, maintenance and service standard values, information regarding the use of special tools, etc.). These are arranged together as major maintenance and service points and explained in detail.

<<A>> : Indicates that there are essential points for removal or disassembly.
>>A<< : Indicates that there are essential points for installation or assembly.


Installation service point
>>A<< Disc brake assembly installation
1. To check the brake drag force after mounting the pad, measure the hub torque in the advancing direction using a spring balance with the pad is removed.
CAUTION
Do not allow any oil, grease or other contamination to contact the friction surfaces of the pads and brake discs.
2. After re-installing the caliper support to the knuckle, install the pad clips and the pads to the caliper support.

Operating procedures, cautions, etc. on removal, installation, disassembly and assembly are described



The title of the page (following the page on which the diagram of component parts is presented) indicating the locations of lubrication and sealing procedures.

Indicates (by symbols) where lubrication is necessary.

Symbols for lubrication, sealants and adhesives

Symbols are used to show the locations for lubrication and for application of sealants and adhesives. These symbols are included in the diagram of component parts or on the page following the component parts page. The symbols do not always have accompanying text to support that symbol.

- : Grease (Multi-purpose grease unless there is a brand or type specified)
- : Sealant or adhesive
- : Brake fluid or automatic transmission fluid
- : Engine oil, gear oil or air conditioning compressor oil
- : Adhesive tape or butyl rubber tape

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TROUBLESHOOTING GUIDELINES

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VERIFY THE COMPLAINT

- Make sure the customer's complaint and the service writer's work order description are understood before starting work.
- Make sure the correct operation of the system is understood. Read the service manual description to verify normal system operation.
- Operate the system to see the symptoms. Look for other symptoms that were not reported by the customer, or on the work order, that may be related to the problem.

DETERMINE POSSIBLE CAUSES

Compare the confirmed symptoms to the diagnostic symptom indexes to find the right diagnosis procedure.
If the confirmed symptoms cannot be found on any symptom index, determine other possible causes.

- Analyze the system diagrams and list all possible causes for the problem symptoms.
- Rank all these possible causes in order of probability, based on how much of the system they cover, how likely they are to be the cause, and how easy they will be to check. Be sure to take experience into account. Consider the causes of similar problems seen in the past. The list of causes should be ranked in order from general to specific, from most-likely to least-likely, and from easy-to-check to hard-to-check.

FIND THE PROBLEM

After the symptoms have been confirmed, and probable causes have been identified, the next step is to make step-by-step checks of the suspected system components, junctions, and links in logical order.
Use the diagnostic procedures in the service manual whenever possible. Follow these procedures carefully to avoid missing an important step in the diagnosis sequence. It might be the skipped step that leads to the solution of the problem.
If the service manual doesn't have step-by-step procedures to help diagnose the problem, make a series of checks based on the ranked list of probable causes. Troubleshooting checks should be made in the order that the list of causes was ranked:

- general to specific
- most-likely to least-likely
- easy-to-check to hard-to-check

REPAIR THE PROBLEM

When the step-by-step troubleshooting checks find a fault, perform the proper repairs. Make sure to fix the root cause of the problem, not just the symptom. Just fixing the symptom, without fixing the root cause, will cause the symptom to eventually return.

VERIFY THE REPAIR

After repairs are made, recheck the operation of the system to confirm that the problem is eliminated. Be sure to check the system thoroughly. Sometimes new problems are revealed after repairs have been made.

HOW TO USE TROUBLESHOOTING/INSPECTION SERVICE POINTS

TROUBLESHOOTING CONTENTS

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Troubleshooting of electronic control systems for which the scan tool can be used follows the basic outline described below. Even in systems for which the scan tool cannot be used, part of these systems still follow this outline.

1. STANDARD FLOW OF DIAGNOSTIC TROUBLESHOOTING

Troubleshooting strategy is shown in each group.

2. SYSTEM OPERATION AND SYMPTOM VERIFICATION TESTS

If verification of the symptom(s) is difficult, procedures for checking operation and verifying symptoms are shown.

3. DIAGNOSTIC FUNCTION

The following trouble code diagnosis are shown.

- How to read diagnostic trouble codes
- How to erase diagnostic trouble codes
- Input inspection service points

4. DIAGNOSTIC TROUBLE CODE CHART

If the scan tool displays a diagnostic trouble code, find the applicable inspection procedure according to this chart.

5. SYMPTOM CHART

If there are symptoms, even though the scan tools show that no DTCs are set, inspection procedures for each symptom will be found by using this chart.

6. DIAGNOSTIC TROUBLE CODE PROCEDURES

Indicates the inspection procedures corresponding to each diagnostic trouble code. (Refer to P.00-8).

7. SYMPTOM PROCEDURES

Indicates the inspection procedures corresponding to each symptom listed in the Symptom Chart. (Refer to P.00-8).

8. SERVICE DATA REFERENCE TABLE

Inspection items and normal judgement values have been provided in this chart as reference information.

9. CHECK AT ECU TERMINALS

Terminal numbers for the ECU connectors, inspection items, and standard values have been provided in this chart as reference information.

TERMINAL VOLTAGE CHECKS

1. Connect a needle-nosed wire probe to a voltmeter probe.

⚠ CAUTION

Short-circuiting the positive (+) probe between a connector terminal and ground could damage the vehicle wiring, the sensor, the ECU, or all three. Use care to prevent this!

2. Insert the needle-nosed wire probe into each of the ECU connector terminals from the wire side, and measure the voltage while referring to the check chart.

   NOTE: Measure voltage with the ECU connectors connected.
   You may find it convenient to pull out the ECU to make it easier to reach the connector terminals. Checks don't have to be carried out in the order given in the chart.

3. If voltage readings differ from normal condition values, check related sensors, actuators, and wiring. Replace or repair as needed.
4. After repair or replacement, recheck with the voltmeter to confirm that the repair has corrected the problem.

TERMINAL RESISTANCE AND CONTINUITY CHECKS

1. Turn the ignition switch to the "LOCK" (OFF) position.
2. Disconnect the ECU connector.

⚠ CAUTION

If resistance and continuity checks are performed on the wrong terminals, damage to the vehicle wiring, sensors, ECU, and/or ohmmeter may occur. Use care to prevent this!

3. Measure the resistance and check for continuity between the terminals of the ECU harness-side connector while referring to the check chart.

   NOTE: Checks don't have to be carried out in the order given in the chart.

4. If the ohmmeter shows any deviation from the Normal Condition value, check the corresponding sensor, actuator and related electrical wiring, then repair or replace.
5. After repair or replacement, recheck with the ohmmeter to confirm that the repair has corrected the problem.

10. INSPECTION PROCEDURES USING AN OSCILLOSCOPE

When there are inspection procedures using an oscilloscope, these are listed.

HOW TO USE THE INSPECTION PROCEDURES

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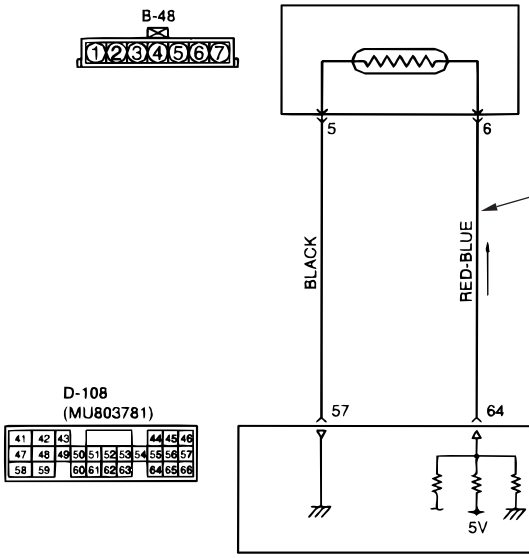
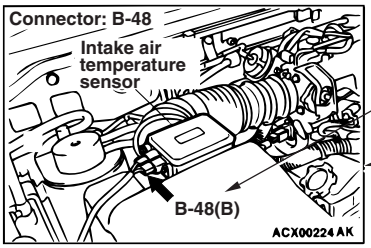
The causes of many of the problems occurring in electric circuitry are generally the connectors, components, the ECU, and the harnesses between connectors, in that order. These inspection procedures follow this order. They first try to discover a problem with a connector or a defective component.

DTC P0110: Intake Air Temperature Circuit Malfunction



(1) Relevant circuit(s) of the component which the DTC indicates are described.

(2) For connector color, refer to GROUP 80A, How to read configuration diagrams.



(3) Shows the location of the connector(s) from the circuit(s) above.

(4) Explains about the operation principle of the component or its relevant parts in that circuit.

CIRCUIT OPERATION

- Approximately 5 volts are applied to the intake air temperature sensor output terminal (terminal 6) from the PCM (terminal 64) via the resistor in the PCM. The ground terminal (terminal 5) is grounded with or PCM (terminal 57).
- The intake air temperature sensor is a negative temperature coefficient type of resistor. When the intake air temperature rises, the resistance decreases.
- The intake air temperature sensor output voltage increases when the resistance increases and decreases when the resistance decreases.

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(5) Explains about technical details.

(6) Describes the conditions for that DTC being set (stored).

(7) Describes possible cause(s)for that DTC.

(8) Start of the diagnosis procedure for that DTC.

(9) Identifies the special tool(s) necessary for diagnosing that DTC.

(10) Provides the inspection procedure for that DTC step by step.

TECHNICAL DESCRIPTION

- The engine coolant temperature sensor converts the engine coolant temperature to a voltage and output it.
- The PCM checks whether this voltage is within a specified range.

DTC SET CONDITIONS

Check Conditions

- Engine coolant temperature was 7°C (45°F) or more immediately before the engine was stopped at the last drive.

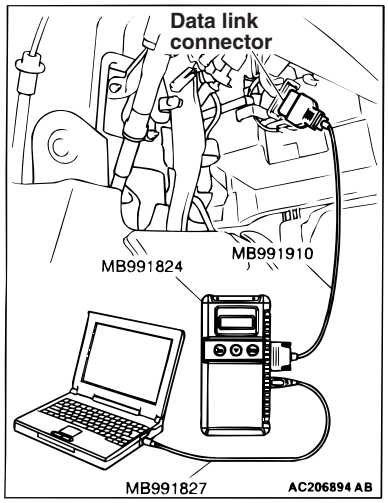
TROUBLESHOOTING HINTS (The most likely causes for this code to be set are:)

- Engine coolant temperature sensor failed.
- Open or shorted engine coolant temperature sensor circuit, or loose connector.
- PCM failed.

DIAGNOSIS

Required special tool:

- MB991958: Scan Tool (MUT-III Sub Assembly)
  - MB991824: V.C.I.
  - MB991827: USB Cable
  - MB991910: Main Harness A



STEP 1. Using scan tool MB991958, check data list item 15: Transmission Fluid Temperature Sensor.

⚠ CAUTION

To prevent damage to scan tool MB991958, always turn the ignition switch to the "LOCK" (OFF) position before connecting or disconnecting scan tool MB991958.

(1) Connect scan tool MB991958 to the data link connector.
(2) Start the engine.
(3) Set scan tool MB991958 to the data reading mode for item 15, Transmission Fluid Temperature Sensor.
- When the engine is cool: Almost equal to the ambient temperature (atmospheric temperature)

NOTE: Set scan tool MB991958 to data reading mode for item number 13, Intake Air Temperature (IAT) Sensor and note the temperature measurement. When the engine is cool, the temperature should be almost equal to the ambient temperature (atmospheric temperature), and the IAT sensor measurement should be approximately the same as the Transmission Fluid Temperature Sensor.

- When the engine is warm: 70 to 80°C (158 to 176°F)

(4) Turn the ignition switch to the "LOCK" (OFF) position.

Q: Is the sensor operating properly?

YES : It can be assumed that this malfunction is intermittent. Refer to GROUP 00, How to Use Troubleshooting/ Inspection Service Points – How to Cope with Intermittent Malfunction .

NO : Go to Step 2.

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HARNESS INSPECTION

Check for an open or short circuit in the harness between the terminals which were faulty according to the connector measurements. Carry out this inspection while referring to GROUP 00E, Harness Connector Inspection P.00E-2. Here, "Check harness between power supply and terminal xx" also includes checking for blown fuse. For inspection service points when there is a blown fuse, refer to "Inspection Service Points for a Blown Fuse P.00-15."

MEASURES TO TAKE AFTER REPLACING THE ECU

If the trouble symptoms have not disappeared even after replacing the ECU, repeat the inspection procedure from the beginning.

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CONNECTOR MEASUREMENT SERVICE POINTS

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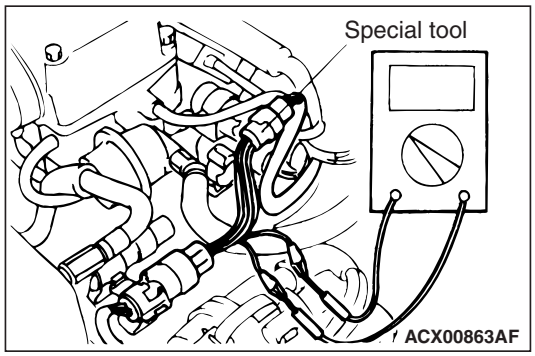
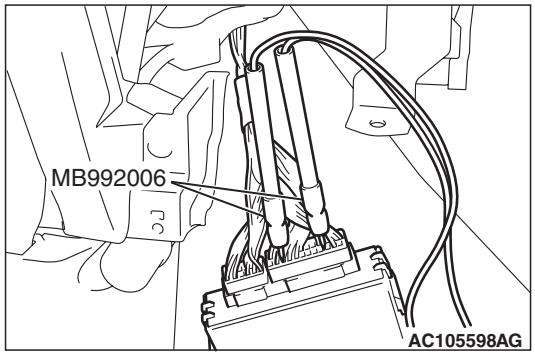
Turn the ignition switch to the "LOCK" (OFF) position when connecting and disconnecting the connectors. Turn the ignition switch to "ON" when measuring, unless there are instructions to the contrary.

IF INSPECTING WITH THE CONNECTOR CONNECTED <WATERPROOF CONNECTORS>



Be sure to use special tool. Never insert a test probe from the harness side, as this will reduce the waterproof performance and result in corrosion.

IF INSPECTING WITH THE CONNECTOR CONNECTED <ORDINARY (NON-WATERPROOF) CONNECTORS>



Required Special Tool:

- MB992006: Extra Fine Probe

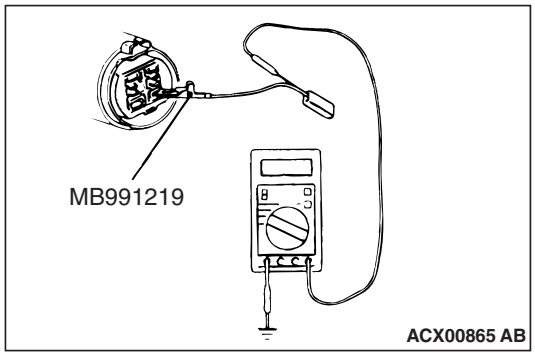
Inspect by inserting a test probe from the harness side. If the connector is too small to insert a test probe (e.g. control unit connector), do not insert it forcibly. Use special tool MB992006 (extra fine probe).

IF INSPECTING WITH THE CONNECTOR DISCONNECTED

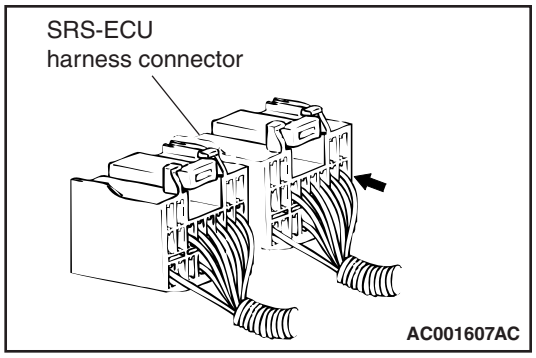
<When Inspecting a Female Pin>

- From front side of the connector

  Required Special Tool:
  MB991219: Inspection Harness (Included in MB991223, Harness Set)



The inspection harness for connector pin contact pressure should be used. The test probe should never be forcibly inserted, as it may cause a defective contact.



- From back side of the connector (SRS-ECU harness side connector)
  Since the SRS-ECU harness connector is plated to improve conductivity, observe the warning below when checking this connector.

⚠ *WARNING*

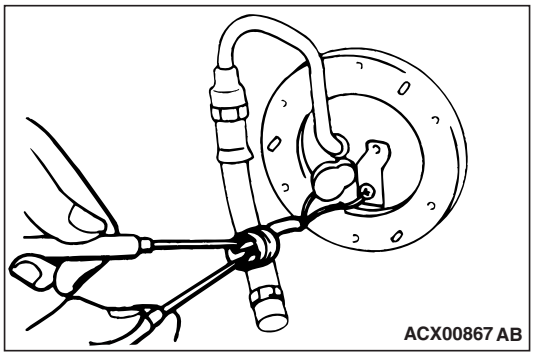
Insert the backprobing tool into the connector from the harness side, and connect the tester to the backprobing tool. If any tool other than the backprobing tool is used, it may cause damage to the harness and other components. Furthermore, measurement should not be carried out by touching the backprobing tool directly against the terminals from the front of the connector. The terminals are plated to increase their conductivity, so that if they are touched directly by the backprobing tool, the plating may break, which will decrease reliability.

<When Inspecting a Male Pin>

⚠ CAUTION

At this time, be careful not to short the connector pins with the test probes. Doing so may damage the circuits inside the ECU.

Touch the pin directly with the test probe.



CONNECTOR INSPECTION SERVICE POINTS

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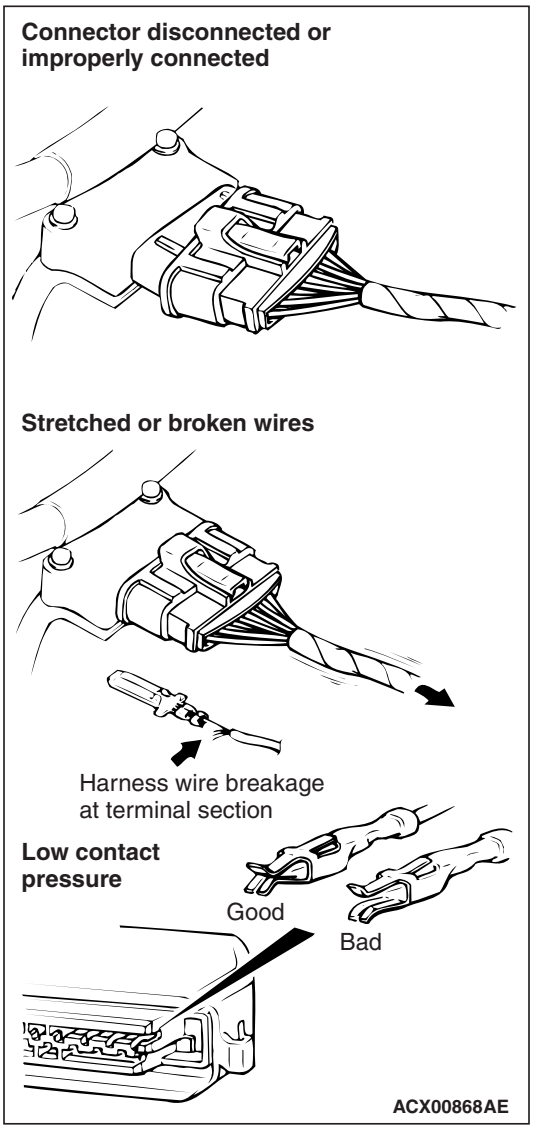
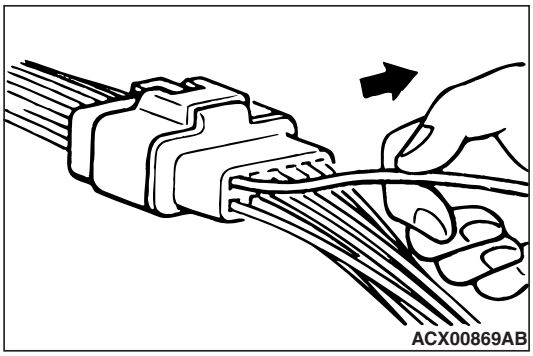
VISUAL INSPECTION



- Connector is disconnected or improperly connected
- Connector pins are pulled out
- Stretched an broken wires at terminal section
- Low contact pressure between male and female terminals
- Low connection pressure due to rusted terminals or foreign matter lodged in terminals

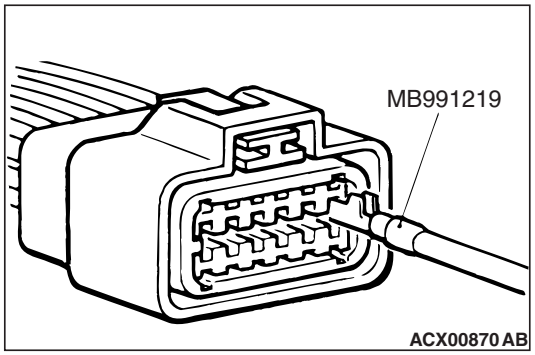
CONNECTOR PIN INSPECTION



If the connector pin stopper is damaged, the terminal connections (male and female pins) will not be perfect even when the connector body is connected, because the pins may pull out of the back side of the connector. Therefore, gently pull the wires one by one to make sure that no pins pull out of the connector.

CONNECTOR ENGAGEMENT INSPECTION

Required Special Tool:
MB991219: Inspection Harness (contained in MB991223 Test Harness)
Use special tool, MB991219 to inspect the engagement of the male pins and female pins. [Pin drawing force: 1 N (0.2 pound) or more]



HOW TO COPE WITH INTERMITTENT MALFUNCTIONS

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Most intermittent malfunctions occur under certain conditions. If those conditions can be identified, the cause will be easier to find.

TO COPE WITH INTERMITTENT MALFUNCTION;

1. ASK THE CUSTOMER ABOUT THE MALFUNCTION

Ask what it feels like, what it sounds like, etc. Then ask about driving conditions, weather, frequency of occurrence, and so on.

2. DETERMINE THE CONDITIONS FROM THE CUSTOMER'S RESPONSES

Typically, almost all intermittent malfunctions occur from conditions like vibration, temperature and/or moisture change, poor connections. From the customer's responses, it should be reasoned which condition is most likely.

3. USE SIMULATION TEST

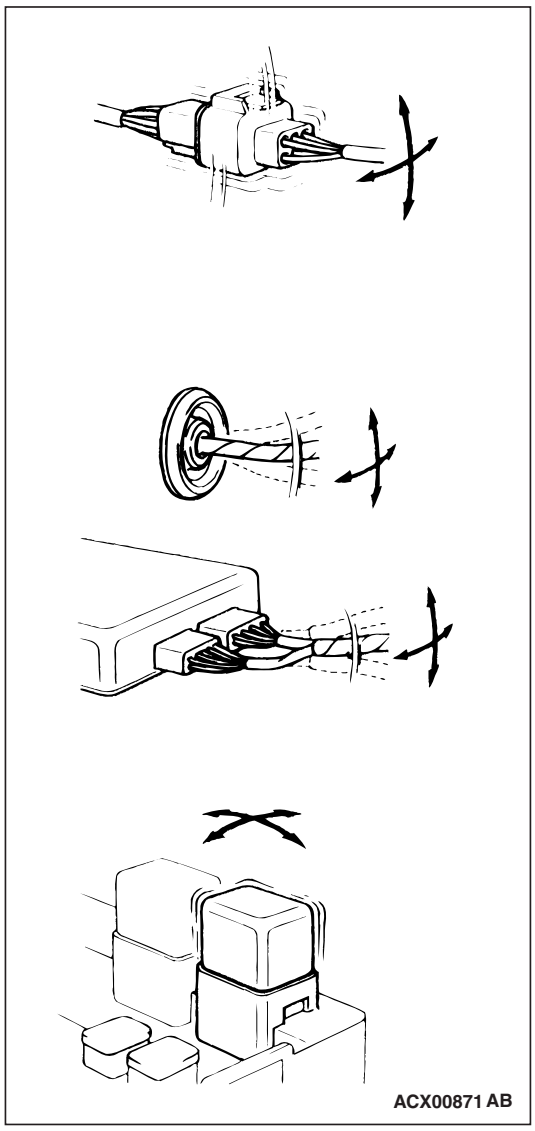
Use the simulation tests below to attempt to duplicate the customer's complaint. Determine the most likely circuit(s) and perform the simulation tests on the connectors and parts of that circuit(s). Be sure to use the inspection procedures provided for diagnostic trouble codes and trouble symptoms.
For temperature and/or moisture condition related intermittent malfunctions, try to change the conditions of the suspected circuit components, then use the simulation tests below.

4. VERIFY THE INTERMITTENT MALFUNCTION IS ELIMINATED

Repair the malfunctioning part and try to duplicate the condition(s) again to verify the intermittent malfunction has been eliminated.

SIMULATION TESTS

NOTE: In case of difficulty in finding the cause of the intermittent malfunction, the data recorder function in the scan tool is effective.



For these simulation tests, shake, then gently bend, pull, and twist the wiring of each of these examples to duplicate the intermittent malfunction.

- Shake the connector up-and-down, and right-and-left.
- Shake the wiring harness up-and-down, and right-and-left. Especially, check the splice points of wiring harnesses carefully. Refer to GROUP 00E, Harness Connector Inspection P.00E-2.
- Shake the part or sensor.

HOW TO TREAT PAST TROUBLE

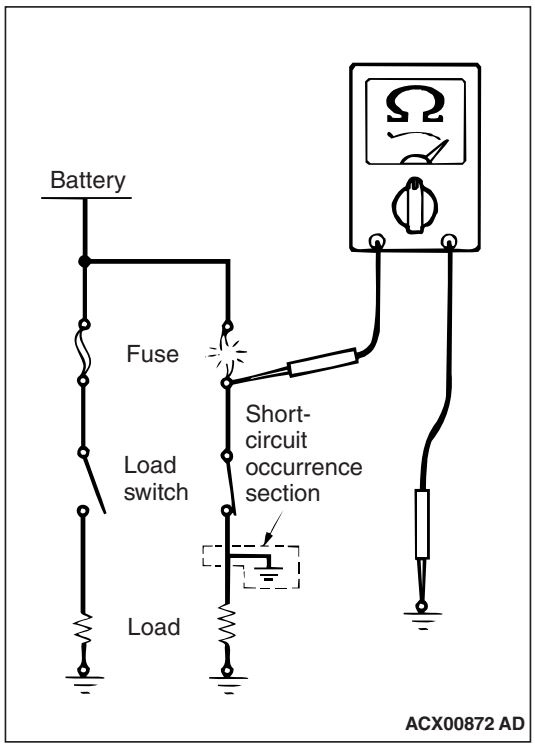
M1001014100384

Since the trouble may still be present even the status is "Stored", set the vehicle to the diagnostic trouble code detection condition and check that the status changes to "Active". If the status does not change from "Stored", carry out the following procedure.

1. Establish from the customer whether a fuse or connector has been replaced or disconnected.
2. If yes, erase the diagnostic trouble code, and then check that no diagnostic code is reset. If no diagnostic trouble code is reset, the diagnosis is complete.
3. If no, follow the applicable Diagnostic Trouble Code Chart. Then check the wiring harness and connector, and refer to "How to Cope with Intermittent Malfunction P.00-13 ."

INSPECTION SERVICE POINTS FOR A BLOWN FUSE

M1001013800409



Remove the blown fuse and measure the resistance between the load side of the blown fuse and the ground. Close the switches of all circuits which are connected to this fuse. If the resistance is almost 0 Ω at this time, there is a short somewhere between these switches and the load. If the resistance is not 0 Ω, there is no short at the present time, but a momentary short has probably caused the fuse to blow.
The main causes of a short circuit are the following.

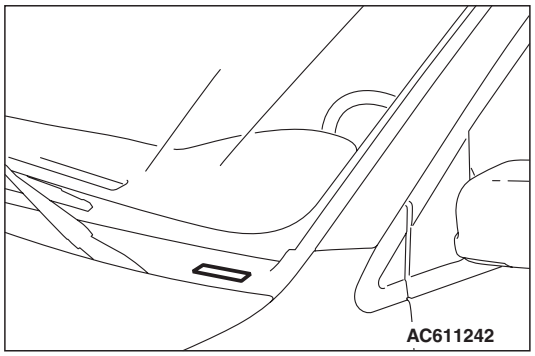
- Harness being clamped by the vehicle body
- Damage to the outer casing of the harness due to wear or heat
- Water getting into the connector or circuitry
- Human error (mistakenly shorting a circuit, etc.)

VEHICLE IDENTIFICATION

VEHICLE IDENTIFICATION

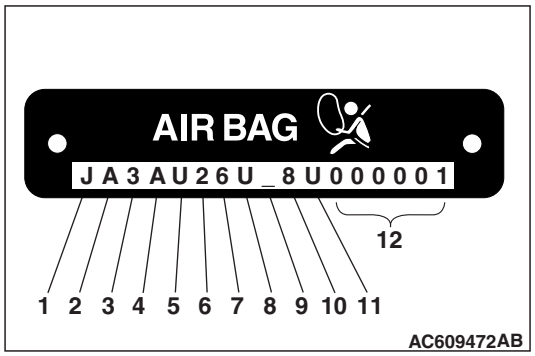
M1001000402117

VEHICLES IDENTIFICATION NUMBER LOCATION



The vehicle identification number (VIN) is located on a plate attached to the left top side of the instrument panel.

VEHICLE IDENTIFICATION CODE CHART PLATE



All vehicle identification numbers contain 17 digits. The vehicle number is a code which tells country, make, vehicle type, etc.

No.	Item	Content
1	Country	J: Japan
2	Make	A: Mitsubishi
3	Vehicle type	3: Passenger car
4	Others	A: Driver and passenger air bags
5	Line	U: LANCER
6	Price class	1: Economy
		2: Low
		8: Sports
7	Body	6: 4-door sedan
8	Engine	U: 2.0L (4B11MIVEC)
9	Check digits*	0, 1, 2, 3, ----------9, X
10	Model year	8: 2008 year
11	Plant	U: Mizushima
12	Serial number	000001 to 999999

*NOTE: *: Check digit means a single number, or letter X, used to verify the accuracy of transcription of vehicle identification number.*

VEHICLE IDENTIFICATION NUMBER LIST

VEHICLES FOR USA

(VEHICLES FOR FEDERAL EMISSION REGULATION)

VIN (Except sequence number)	Brand	Engine displacement	Model code
JA3AU16U_8U	MITSUBISHI LANCER	2.0L	CY4ASNLHL2M
			CY4ASTLHL2M
JA3AU26U_8U			CY4ASNSHL2M
			CY4ASTSHL2M
JA3AU86U_8U			CY4ASNXHL2M
			CY4ASTXHL2M

(VEHICLES FOR CALIFORNIA EMISSION REGULATION)

VIN (Except sequence number)	Brand	Engine displacement	Model code
JA3AU16U_8U	MITSUBISHI LANCER	2.0L	CY4ASNLHL7M
			CY4ASTLHL7M
JA3AU26U_8U			CY4ASNSHL7M
			CY4ASTSHL7M
JA3AU86U_8U			CY4ASNXHL7M
			CY4ASTXHL7M

VEHICLES FOR PUERTO RICO

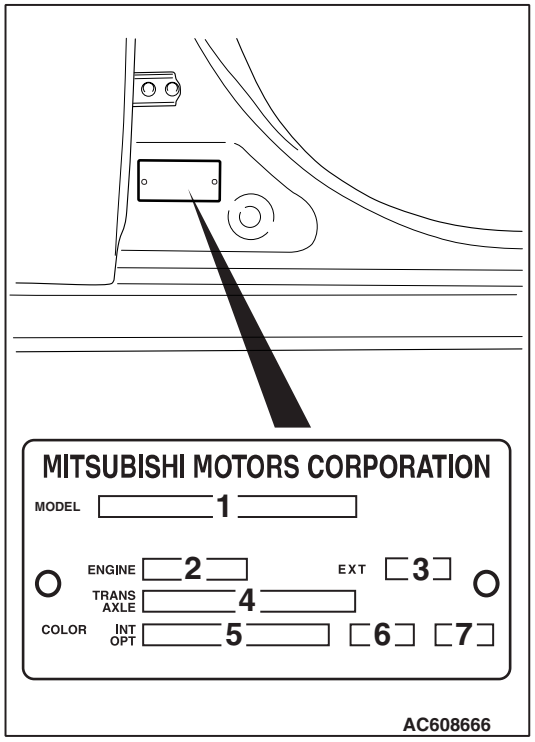
VIN (Except sequence number)	Brand	Engine displacement	Model code
JA3AU16U_8U	MITSUBISHI LANCER	2.0L	CY4ASNLHL2M
			CY4ASTLHL2M
JA3AU26U_8U			CY4ASNSHL2M
			CY4ASTSHL2M
JA3AU86U_8U			CY4ASNXHL2M
			CY4ASTXHL2M

VEHICLES FOR CANADA

VIN (Except sequence number)	Brand	Engine displacement	Model code
JA3AU16U_8U	MITSUBISHI LANCER	2.0L	CY4ASNLHL3M
			CY4ASTLHL3M
JA3AU26U_8U			CY4ASNSHL3M
			CY4ASTSHL3M
JA3AU86U_8U			CY4ASNXHL3M
			CY4ASTXHL3M

VEHICLE IDENTIFICATION CODE PLATE

M1001005401164



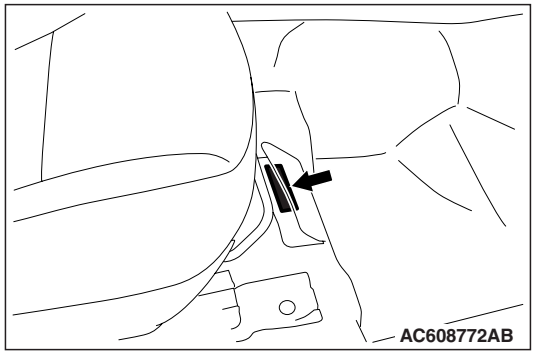
The vehicle information code plate is riveted to the face of the passenger's door sill.
The plate shows model code, engine model, transaxle model and body color code.

No.	Item	Content	
1	MODEL	CY4ASTXHL2M	CY4AS: Vehicle model
			TXHL2M: Model series
2	ENGINE	4B11	Engine model
3	EXT	W37A	Exterior code
4	TRANS AXLE	F1CJA	Transaxle model
5	COLOR	W37	Body color code
6	INT	04X	Interior code
7	OPT	ZP6	Equipment code

For monotone color vehicles, the body color code shall be indicated.

CHASSIS NUMBER

STAMPING LOCATION

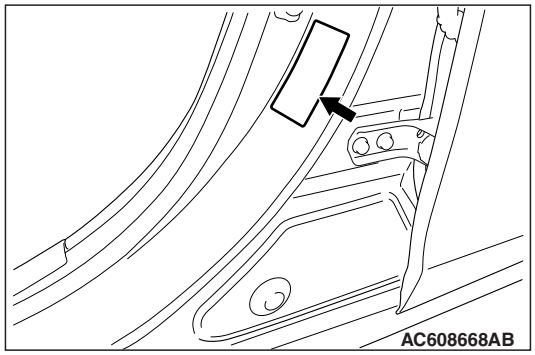


The chassis number is stamped on the front floor pan.

CHASSIS NUMBER CODE CHART

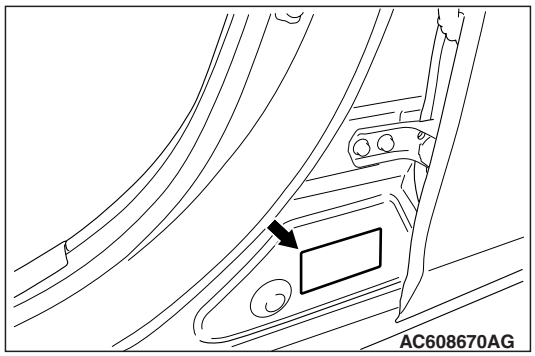
Chassis number code	Content	
CY4A8U00001	CY4A; Vehicle line	CY4A; LANCER
	8U000001; Refer to 10th thru 17th digits of VIN plate	

TIRE AND LOADING INFORMATION PLACARD



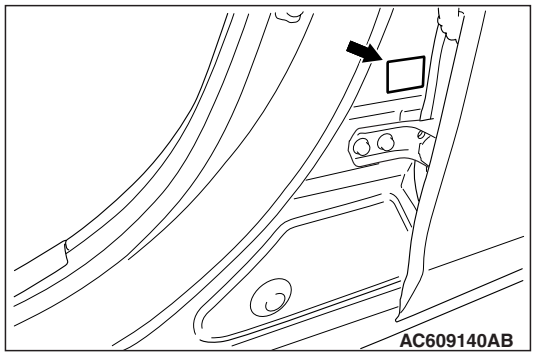
The tire and loading information placard is located on the inside sill of the driver's door.

VEHICLE SAFETY CERTIFICATION LABEL(Except for Canada)


AC608670AG

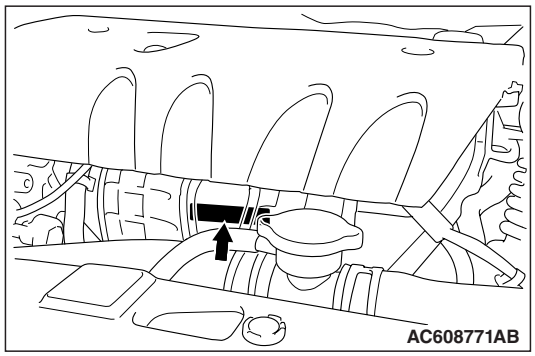
The vehicle safety certification label is attached to the face of the left door sill.
This label indicates the month and year of manufacture, Gross Vehicle Weight Rating (GVWR), front and rear Gross Axle Weight Rating (GAWR), and Vehicle Identification Number (VIN).

NATIONAL SAFETY MARK (for Canada)


AC609140AB

The tire and loading information placard is located on the inside sill of the driver's door.

ENGINE MODEL STAMPING


AC608771AB

The engine model is stamped on the cylinder block.
These engine model numbers are as shown as follows.

Engine model	Engine displacement
4B11	2.0L

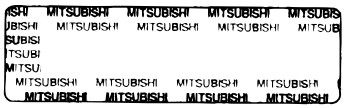
The engine serial number is stamped near the engine model number.

THEFT PROTECTION

In order to protect against theft, a Vehicle Identification Number (VIN) is attached as a plate or label to the following major parts of the engine and transaxle, as well as main outer panels:
Engine cylinder block, Transaxle housing, Hood, Bumpers, Front end crossmember, Front fender, Doors
In addition, a theft-protection label is attached to replacement parts for the body outer panel main components, and the same data is stamped into replacement parts for the engine and the transaxle.

Theft protection label

For original parts



For replacement parts

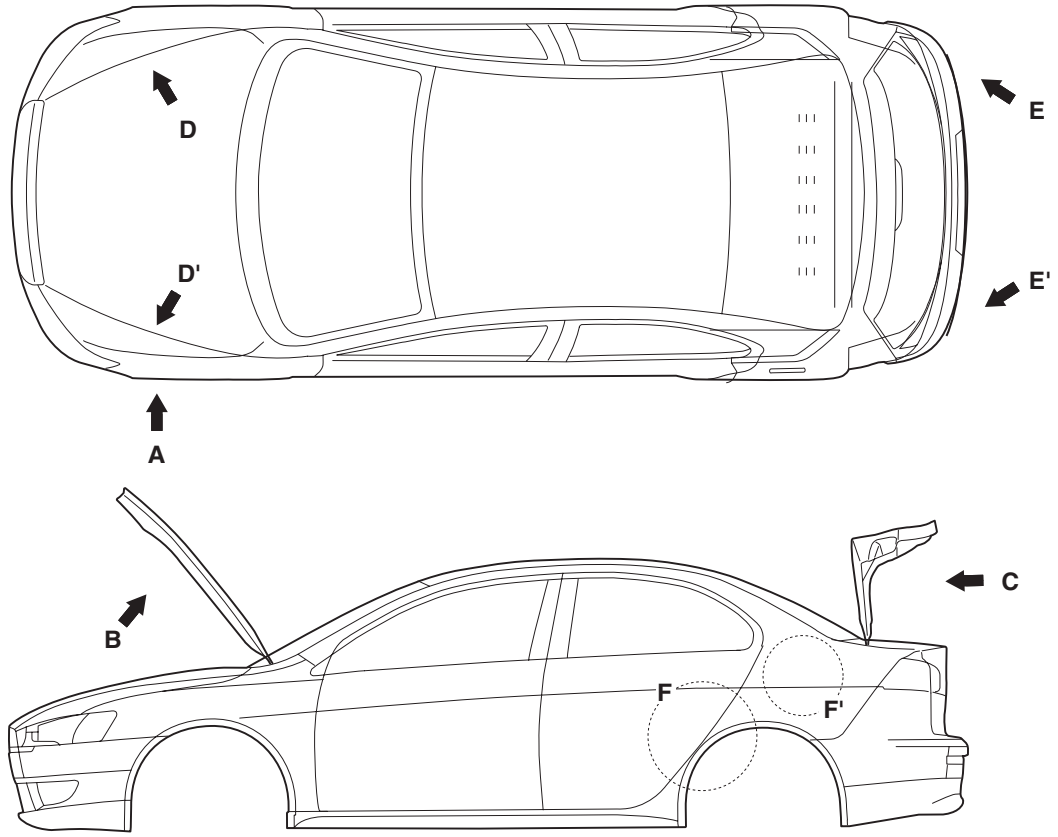
AC101015AF

⚠ CAUTION

Cautions regarding panel repairs:

- **When repainting original parts, do so after first masking the theft-protection label. After painting, be sure to peel off the masking tape.**
- **The theft-protection label for replacement parts is covered by masking tape, so such parts can be painted as is. The masking tape should be removed after painting is finished.**
- **The theft-protection label should not be removed from original parts or replacement parts.**

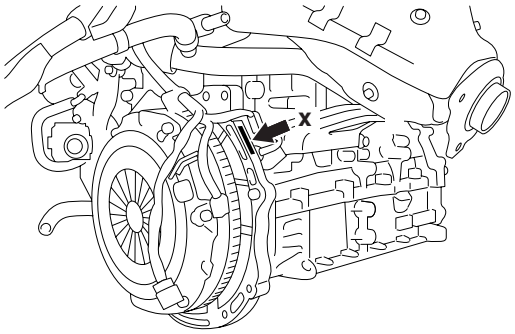
LOCATIONS



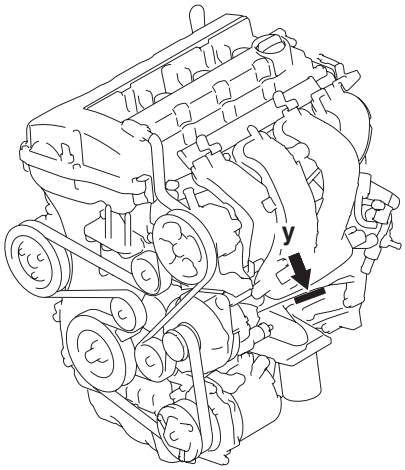
AC608684AB

Label area (x: for original equipment parts, y: for replacement parts)

Engine

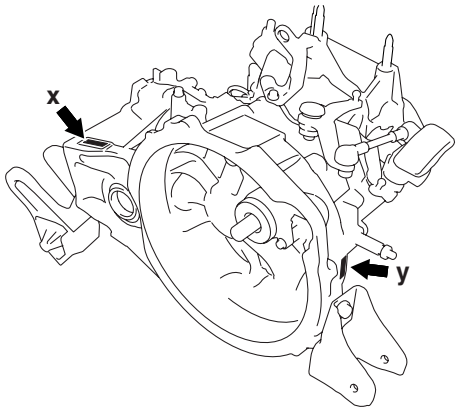


AC609841AB



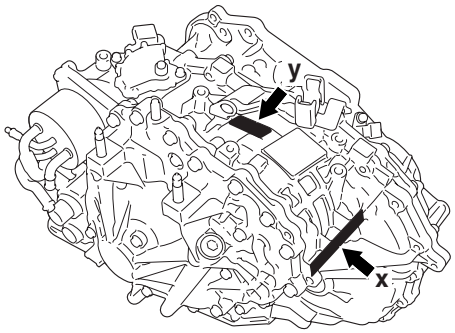
AC612304AB

Manual transaxle (M/T)



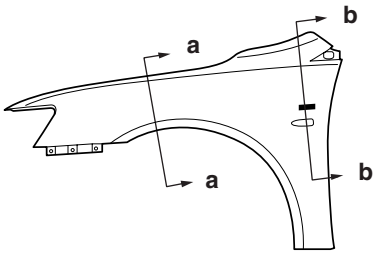
AC609676AB

CVT

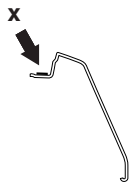


AC610554AB

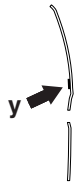
View A (Front fender)



Section a - a



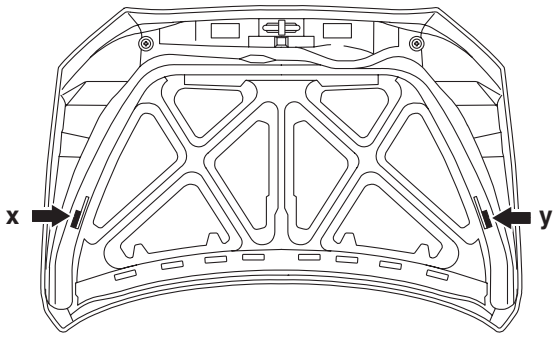
Section b - b



The illustration indicates left outer side.
Right side is symmetrically opposite.

AC608723AB

View B (Hood)

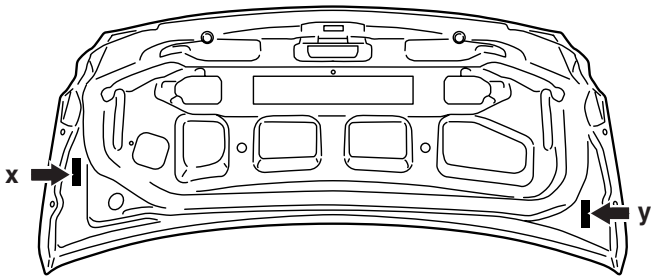


AC608685AB

TSB Revision

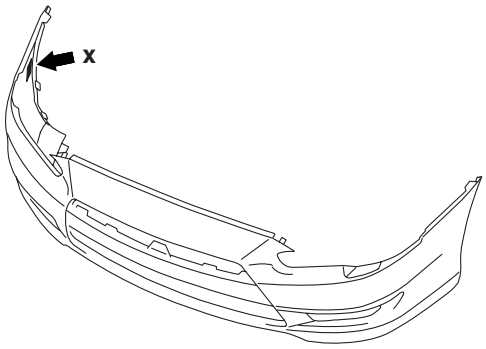
Label area (x: for original equipment parts, y: for replacement parts)

View C (Trunk lid)



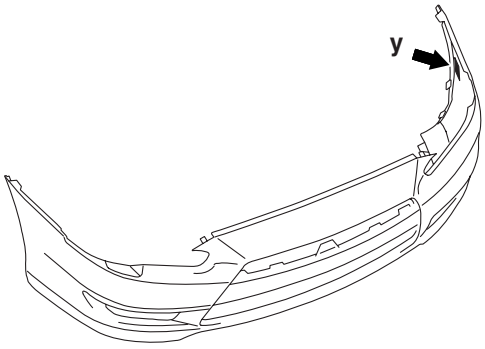
AC612302AB

View D (Front bumper)



AC608690AB

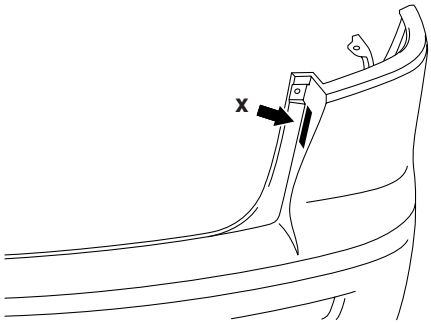
View D'



AC609256AB

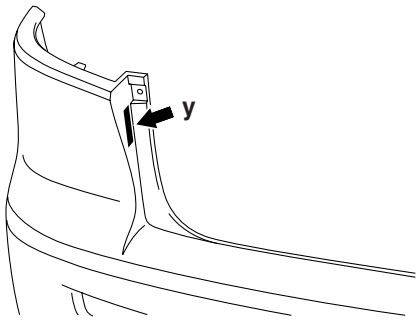
Label area (x: for original equipment parts, y: for replacement parts)

View E (Rear bumper)



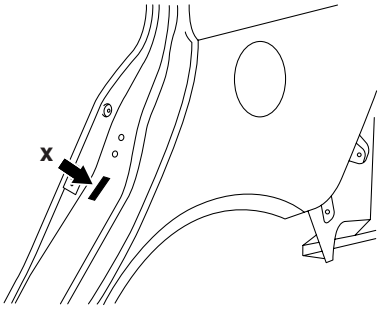
AC608729AB

View E'



AC608730AB

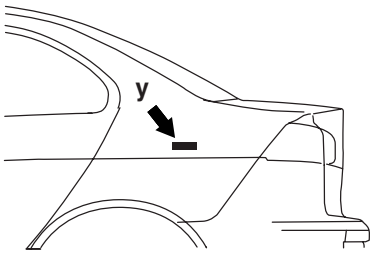
View F (Side outer panel)



The illustration indicates left outer side.
Right side is symmetrically opposite.

AC608733AB

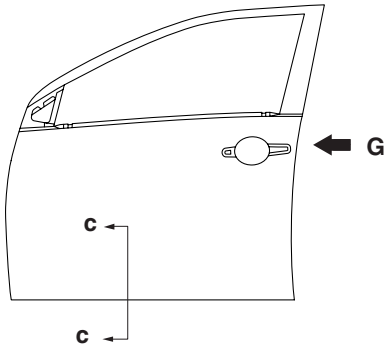
View F'



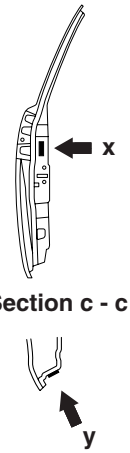
The illustration indicates left outer side.
Right side is symmetrically opposite.

AC611136AB

(Front door)



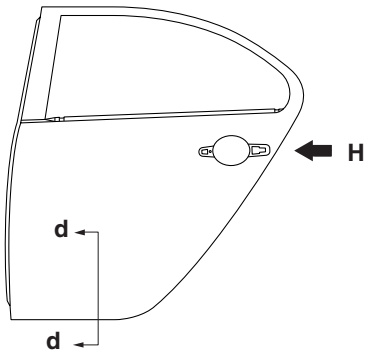
View G



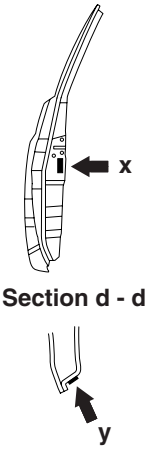
The illustration indicates left outer side.
Right side is symmetrically opposite.

AC608731AB

(Rear door)



View H



The illustration indicates left outer side.
Right side is symmetrically opposite.

AC608734AB

TSB Revision

PRECAUTIONS BEFORE SERVICE

SUPPLEMENTAL RESTRAINT SYSTEM (SRS)

M1001011600636

1. Items to review when servicing SRS:
   (1) Be sure to read GROUP 52B, Supplemental Restraint System (SRS). For safe operation, please follow the directions and heed all warnings.
   (2) Wait at least 60 seconds after disconnecting the battery cable before doing any further work. The SRS system is designed to retain enough voltage to deploy the air bag even after the battery has been disconnected. Serious injury may result from unintended air bag deployment if work is done on the SRS system immediately after the battery cable is disconnected.
   (3) Warning labels must be heeded when servicing or handling SRS components. Warning labels can be found in the following locations.
   - Air bag module (Driver's or front passenger's)
   - Clock spring
   - SRS-ECU
   - Knee air bag module
   - Sun visor
   - Seat belt pre-tensioner
   - Side-airbag module (Driver's side and front passenger's side)
   - Curtain air bag module (Driver's side and front passenger's side)
   - Center pillar (Driver's side and front passenger's side)
   - Glove box

   (4) Always use the designated special tools and test equipment.
   (5) Store components removed from the SRS in a clean and dry place. The air bag module should be stored on a flat surface and placed so that the pad surface is facing upward.
   (6) Never attempt to disassemble or repair the SRS components (SRS-ECU, air bag module and clock spring). If there is a defect, replace the defective part.
   (7) Whenever you finish servicing the SRS, check the SRS warning light operation to make sure that the system functions properly.
   (8) Be sure to deploy the air bag before disposing of the air bag module or disposing of a vehicle equipped with an air bag (Refer to GROUP 52B P.52B-393, Air Bag Module Disposal Procedures).
2. Observe the following when carrying out operations on places where SRS components are installed, including operations not directly related to the SRS air bag.
   (1) When removing or installing parts, do not allow any impact or shock to occur to the SRS components.
   (2) If heat damage may occur during paint work, remove the SRS-ECU, the air bag module, clock spring, the front impact sensor, the side impact sensor, and the seat belt pre-tensioner.
   - SRS-ECU, air bag module, clock spring, front impact sensor, the side impact sensor: 93 °C (200 °F) or more
   - Seat belt pre-tensioner: 90 °C (194 °F) or more

HOW TO PERFORM VEHICLE IDENTIFICATION NUMBER (VIN) WRITING

M1001011400386

⚠ CAUTION

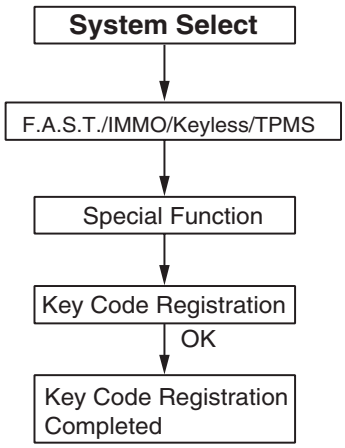
The F.A.S.T-Key (Free-hand Advanced Security Transmitter) is described as the Keyless Operation System (KOS) in this manual. (KOS is indicated as F.A.S.T. in the M.U.T.-III display.)

Follow the procedure below to register the VIN of the Wireless Control Module (WCM) and the Keyless Operation System (KOS).

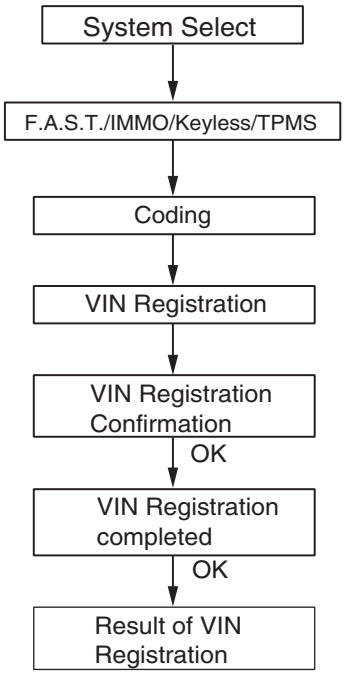
The VIN is stored in the engine control module (ECM), WCM, and the KOS-ECU. If the VIN is improperly erased, the engine warning light or the keyless operation system warning indicator illuminate, and the diagnostic trouble code is displayed. When the ECM, WCM, and the KOS-ECU are replaced, follow the procedure below to write the VIN.

Screen frow of scan tool (M.U.T.- III)

<When ECM is replaced>



<When WCM or KOS-ECU are replaced>



AC609797AB

WRITING PROCEDURE

Required Special Tools:

- MB991958: Scan Tool (M.U.T.-III Sub Assembly)
  - MB991824: V.C.I.
  - MB991827: M.U.T.-III USB Cable
  - MB991910: M.U.T.-III Main Harness A

⚠ CAUTION

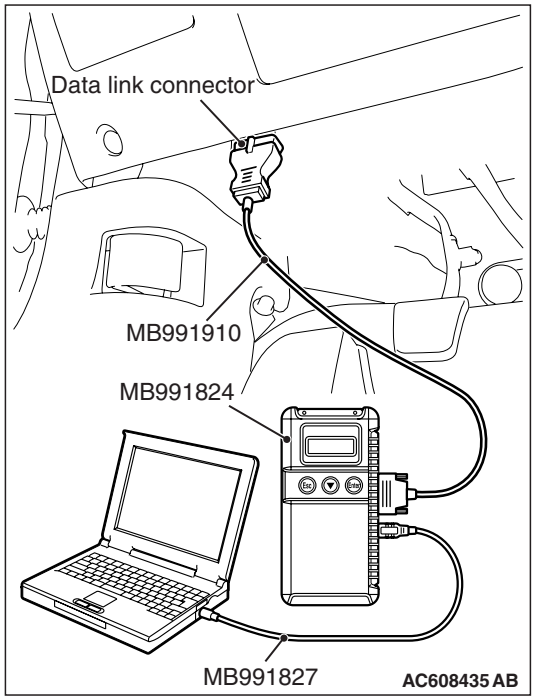
Check that diagnostic trouble code P0603 "EEPROM fail" is not set. When diagnostic trouble code P0603 "EEPROM fail" is set, the ECM cannot store the key code even if the key code is registered. If this diagnostic trouble code is set, troubleshoot the ECM and repair. Then register the key code to the ECM.

⚠ CAUTION

Check that diagnostic trouble code P0630 "VIN not programmed" is not set. When diagnostic trouble code P0630 "VIN not programmed" is set, the VIN is not written to the ECM. After VIN is written in ECM, the Key Code Registration is executed.

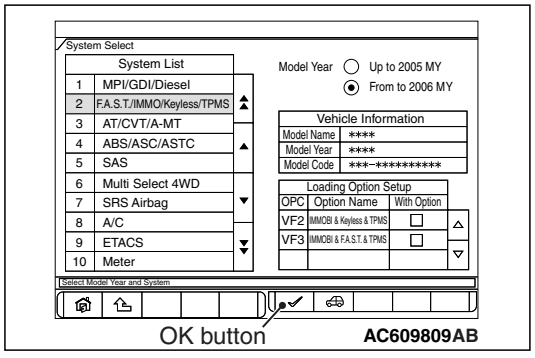
Connect scan tool MB991958 to the 16-pin data link connector as follows.

NOTE: For details on how to use scan tool MB991958, refer to the "M.U.T.-III Owner's Manual."

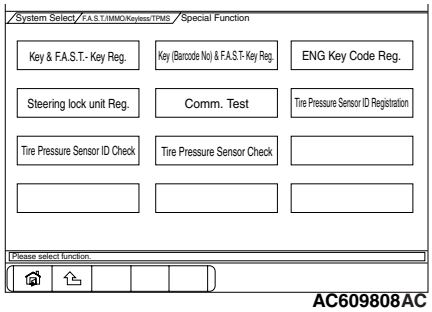


1. Ensure that the ignition switch is at the "LOCK" (OFF) position.
2. Start up the personal computer.
3. Connect special tool MB991827 to special tool MB991824 and the personal computer.
4. Connect special tool MB991910 to the special tool MB991824.
5. Connect special tool MB991910 to the data link connector of the vehicle.
6. Turn the special tool MB991824 power switch to the "ON" position.

   NOTE: When the special tool MB991824 is energized, the special tool MB991824 indicator light will be illuminated in a green color.
7. Start the "M.U.T.-III system" on the personal computer and turn the ignition switch to the "ON" position.
8. Select "F.A.S.T./IMMO/Keyless/TPMS" button from the "System Select" screen. Then, select the applicable option code item and push the OK button.
9. Select "Special Function" on the next screen.

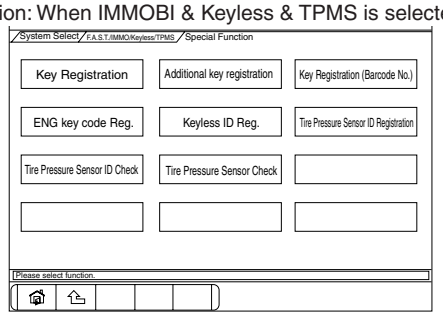


Option: When IMMOBI & F.A.S.T. & TPMS is selected



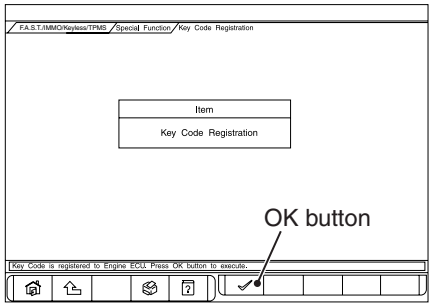
AC609808AC

Option: When IMMOBI & Keyless & TPMS is selected



AC609801AC

10. Select "ENG Key Code Reg." from the "Special Function" screen.



AC609800AB

11. Push the OK button after "ENG Key Code Reg." is displayed.
12. Push the OK button after "Completed." is displayed.
13. Turn off scan tool MB991958.
14. Turn the ignition switch to the "LOCK" (OFF) position and then disconnect scan tool MB991958.

TSB Revision

VIN WRITING STEPS FOR WCM AND KOS-ECU

⚠ CAUTION

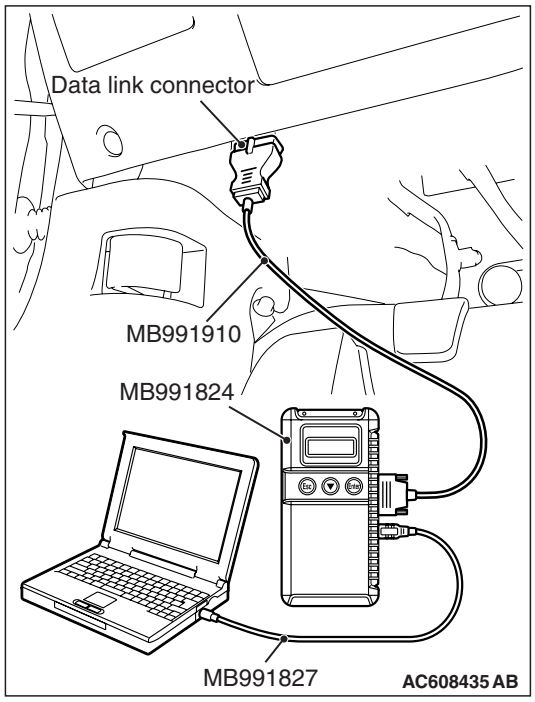
Check that diagnostic trouble code B2416 "ECU internal error" is not set. When diagnostic trouble code B2416 "ECU internal error" is set, the WCM and the KOS-ECU cannot store the VIN even if the VIN is written. If this diagnostic trouble code is set, troubleshoot the WCM or the KOS-ECU and repair. Then write the VIN to the WCM or the KOS-ECU.

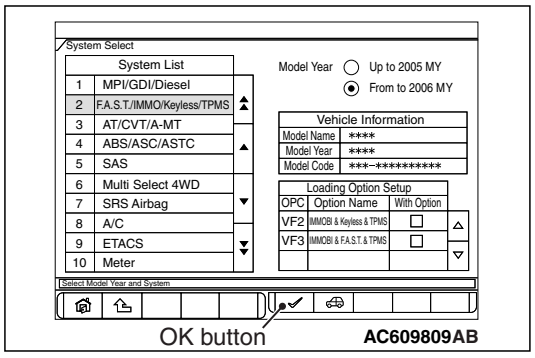
Connect scan tool MB991958 to the 16-pin data link connector as follows.

NOTE: For details on how to use scan tool MB991958, refer to the "M.U.T.-III Owner's Manual."

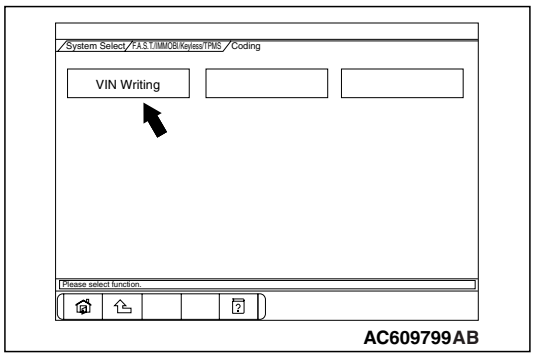
1. Ensure that the ignition switch is at the "LOCK" (OFF) position.
2. Start up the personal computer.
3. Connect special tool MB991827 to special tool MB991824 and the personal computer.
4. Connect special tool MB991910 to the special tool MB991824.
5. Connect special tool MB991910 to the data link connector of the vehicle.
6. Turn the special tool MB991824 power switch to the "ON" position.

   NOTE: When the special tool MB991824 is energized, the special tool MB991824 indicator light will be illuminated in a green color.
7. Start the "M.U.T.-III system" on the personal computer and turn the ignition switch to the "ON" position.
8. Select "F.A.S.T./IMMO/Keyless/TPMS" button from the "System Select" screen. Then, select the applicable option code item and push the OK button.
9. Select "Coding" on the next screen.

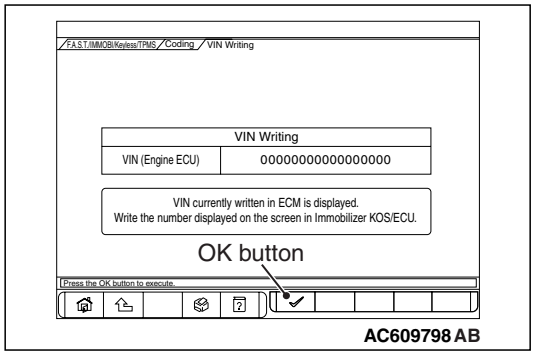




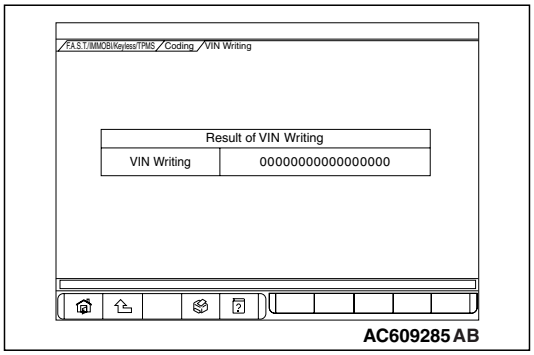
10. Select "VIN Writing" on "Coding" screen.



TSB Revision


F.A.S.T./IMMOBI/Keyless/TPMS/Coding/VIN Writing
VIN Writing
VIN (Engine ECU)
00000000000000000
VIN currently written in ECM is displayed.
Write the number displayed on the screen in Immobilizer KOS/ECU.
OK button
Press the OK button to execute.
AC609798 AB

11. Push the OK button after the VIN written in the engine control module is displayed.
12. Push the OK button after "VIN Writing will start. Are you sure?" is displayed.
13. Push the OK button after "Completed." is displayed.



AC609285 AB

14. Result of VIN writing is displayed.
15. Resister the other ID code. (Refer to GROUP 42B, Troubleshooting –ID Code Registration Judgement Table P.42B-13 Vehicles with KOS or GROUP 42C, Troubleshooting –ID Code Registration Judgement Table P.42C-8 Vehicles with WCM.)

INITIALIZATION PROCEDURE FOR LEARNING VALUE IN MFI ENGINE

M1001011700547

When the following service is performed, initialize the learning value.

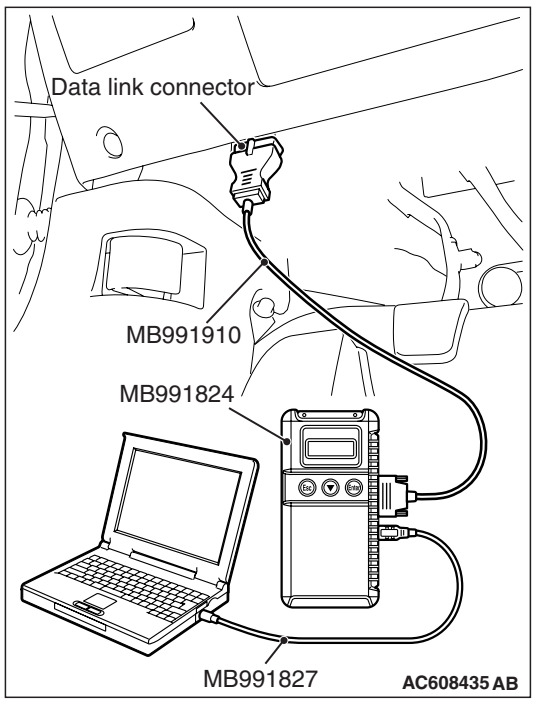
- At replacing engine assembly*
- At replacing throttle body and at cleaning
- At replacing knock sensor

*NOTE: * Initialize CVT-related learning value.*

INITIALIZATION PROCEDURE

Required Special Tools:

- MB991958: Scan Tool (M.U.T.-III Sub Assembly)
  - MB991824: V.C.I.
  - MB991827: M.U.T.-III USB Cable
  - MB991910: M.U.T.-III Main Harness A



⚠ CAUTION

To prevent damage to scan tool MB991958, always turn the ignition switch to the "LOCK" (OFF) position before connecting or disconnecting scan tool MB991958.

1. Connect scan tool MB991958 to the data link connector.
2. Turn the ignition switch to the "ON" position.
3. Select "Check Mode" form the menu screen.
4. Select "ERASE MEMORY" form the menu screen.
5. Initialize the learning value.
6. After initialization of the learning value, learn the idling in MFI engine. (Refer to LEARNING PROCEDURE FOR IDLING IN MFI ENGINE).

ENGINE IDLING LEARNING PROCEDURE

M1001011800652

PURPOSE

When the ECM is replaced, or when the learned value is initialized, the idle may not be stabilized. Carry out the learning method by following the procedures below.

LEARNING PROCEDURE

1. Start the engine and warm to reach 80° C (176° F) or more.
   NOTE: When the engine coolant temperature is 80 °C (176 °F) or more, the warm-up is not needed if the ignition switch is in "ON" position once.
2. Turn the ignition switch to "LOCK" (OFF) position.
3. After 10 seconds or more, start the engine again.
4. For 10 minutes, carry out the idling under the condition shown below and then confirm the engine idles normally.
   - Transaxle: Neutral (P range on vehicles with CVT)
   - Operation in ignition-related, fan and attachments: Not to be operated
   - Engine coolant temperature: 80° C (176° F) or more

   NOTE: If the engine stalls while idling, check for a dirty (on the throttle valve) of the throttle body and clean if needed. Then perform the service from Procedure 1 again.

INITIALIZATION PROCEDURE FOR THROTTLE ACTUATOR CONTROL MOTOR

When the battery cable is disconnected and reconnected, throttle actuator control motor valve (Fully closed position) is eliminated, so that the throttle valve opening angle control would not be performed correctly. When the battery cable is disconnected and reconnected, initialize the throttle actuator control motor using the following procedure.

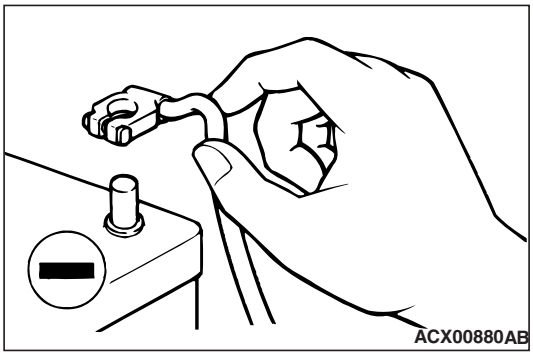
1. Turn the ignition switch to the "ON" position then, turn the ignition switch to "LOCK" (OFF) position.
2. For 10 seconds or more, keep the ignition switch in "LOCK" (OFF) position.

SERVICING ELECTRICAL SYSTEM

M1001011900433

⚠ ***WARNING***

Battery posts, terminals and related accessories contain lead and lead compounds. WASH HANDS AFTER HANDLING.



1. Note the following before proceeding with working on the electrical system.

   Never perform unauthorized modifications to any electrical device or wiring. Such modifications might lead to a vehicle malfunction, over-capacity or short-circuit that could result in a fire in the vehicle.

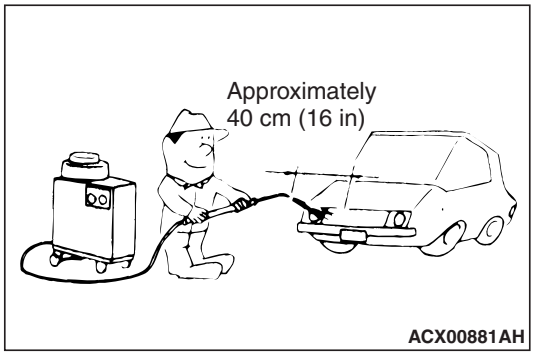
⚠ **CAUTION**

- **Before connecting or disconnecting the negative battery cable, be sure to turn the ignition switch to the "LOCK" (OFF) position and turn off the lights (If this is not done, there is the possibility of semiconductor parts being damaged).**
- **After completion of the work (and the negative battery terminals is connected), warm up the engine and allow it to idle for approximately 10 minutes under the conditions described below in order to stabilize engine control conditions, and then check to be sure that the idle is satisfactory.**
  - **Engine coolant temperature: 85 –95° C (185 –203° F)**
  - **Lights and all accessories: OFF**
  - **Transaxle: "P" position**
  - **Steering wheel: straight-forward position**

2. When servicing the electrical system, disconnect the negative cable terminal from the battery.

VEHICLE WASHING

M1001012000400



1. If high-pressure car-washing equipment or steam car-washing equipment is used to wash the vehicle, be sure to maintain the spray nozzle at a distance of at least approximately 40cm (16 inches) from any plastic parts and all opening parts (doors, luggage compartment, etc.).
2. If high-pressure car-washing equipment or steam car-washing equipment is used to wash the vehicle, be sure to observe the following instructions to prevent damages to the plastic parts.
   - Spray nozzle distance: Approximately 40 cm or more
   - Spray pressure: 3,900 kPa or less
   - Spray temperature: 82 °C or less
   - Time of intensive spraying to one point: Within 30 seconds

APPLICATION OF ANTI-CORROSION AGENTS AND UNDERCOATS

M1001011000117

Be careful not to apply oil or grease to the heated oxygen sensor. If applied, the sensor may malfunction. Protect the heated oxygen sensor with a cover before applying anti-corrosion agent, etc.

SCAN TOOL (MULTI USE TESTER { M.U.T.-III } SUB ASSEMBLY)

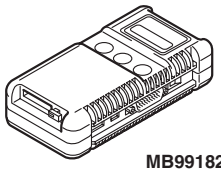
M1001012400226

⚠ CAUTION

Turn the ignition switch to the "LOCK" (OFF) position before disconnecting or connecting the scan tool.

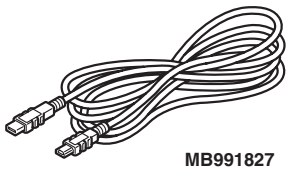
NOTE: M.U.T.-III trigger harness is not necessary when pushing V.C.I. ENTER key.

VEHICLE COMMUNICATION INTERFACE (V.C.I.)



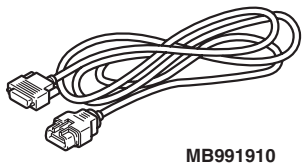
MB991824

M.U.T.-III USB CABLE



MB991827

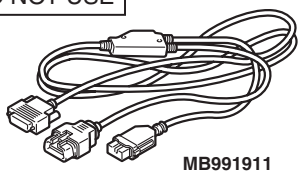
M.U.T.-III MAIN HARNESS A



MB991910

M.U.T.-III MAIN HARNESS B

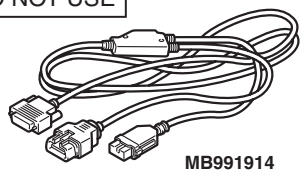
DO NOT USE



MB991911

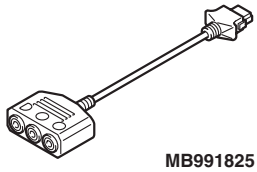
M.U.T.-III MAIN HARNESS C

DO NOT USE



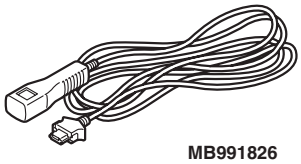
MB991914

M.U.T.-III MEASUREMENT ADAPTER



MB991825

M.U.T.-III TRIGGER HARNESS



MB991826

AC21088AD

BOLTS AND NUTS WITH STABILIZER FOR COEFFICIENT OF FRICTION

M1001014800082

The bolts and nuts with stabilizer for coefficient of friction have been used for the connections such as the suspension arm and crossmember in order to stabilize the axial force and to ensure the high axial force at bolt/nut connections, resulting in improved reliability.

NOTE: The bolts and nuts with stabilizer for coefficient of friction mean that the bolts and nuts with surface treatment to stabilize and reduce the coefficient of friction, allowing to achieve the stable axial force and to secure the high axial force with low tightening torque.

CODING LIST

M1001015000090

Before troubleshooting, check that the coding data written into the engine control module and ETACS-ECU are normal. If they are not the same as the initial settings, various functions and systems will not work correctly.

VARIANT CODING

Required Special Tools:

- MB991958: Scan Tool (M.U.T.-III Sub Assembly)
  - MB991824: Vehicle Communication Interface (V.C.I.)
  - MB991827: M.U.T.-III USB Cable
  - MB991910: M.U.T.-III Main Harness A (Vehicles with CAN communication system)

⚠ CAUTION

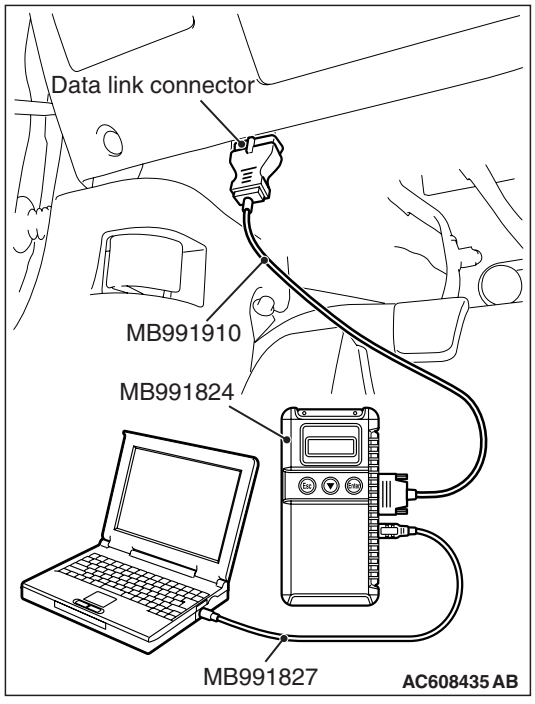
The items marked with*3 are actually installed to a vehicle but their initial settings are "Not present." This is because the items do not adapt CAN, and does not indicate abnormal coding data.

The coding data can be checked by operating scan tool MB991958.

NOTE: For details on how to use the scan tool MB991958, refer to the "M.U.T.-III Owner's manual".

⚠ CAUTION

To prevent damage to scan tool MB991958, always turn the ignition switch to the "LOCK" (OFF) position before connecting or disconnecting scan tool MB991958.



1. Ensure that the ignition switch is at the "LOCK" (OFF) position.
2. Start up the personal computer.
3. Connect special tool MB991827 to special tool MB991824 and the personal computer.
4. Connect special tool MB991910 to special tool MB991824.
5. Connect special tool MB991910 to the data link connector.
6. Turn the power switch of special tool MB991824 to the "ON" position.

   NOTE: When special tool MB991824 is energized, special tool MB991824 indicator light will be illuminated in a green color.
7. Start the "M.U.T.-III system" on the personal computer.
8. Turn the ignition switch to the "ON" position.
9. Select "System select" from the start-up screen.
10. Select "From 2006 MY" under "Model Year". Check that "Vehicle Information" contents are correct.
11. On the system list screen, select "MFI" to check the engine control module data, and "ETACS" to check the ETACS-ECU data.

    NOTE: If "Loading Option Setup" list is shown, click appropriate box.
12. Select "Coding."

13.Select "Coding Information."

14.If the displayed coding information is different from the corresponding initial setting in the list, replace the ECU with a correctly coded one. For replacement of the engine control module, refer to GROUP 13A, engine control module P.13A-952. For replacement of the ETACS-ECU, refer to GROUP 54A, ETACS P.54A-564.

ENGINE CONTROL MODULE CODING DATA LIST

Item name	Initial value
Final gear ratio	6.120
Tire circumference <CVT vehicles only>	2015mm
IMMOBILIZER	Present
ABS	Present or Not present
ASC	Not present
S/W variation	Variation No.1

ETACS-ECU CODING DATA LIST

Item name	Initial value
Vehicle line	LANCER
Model year	(Displays the model year)
Destination	U.S.
Transaxle	5MT or CVT
Engine type	D4 V.V.T. 2.0L
Engine power	Normal
Handle side	LHD
Final drive	Front Drive
Transfer	2WD
Tire size	205/60R16 or 215/45R18
Tire circumference	2015mm
Fuel tank	Not used
DRL*1	Dimming DRL W/P or Independent DRL/P
Smart entry system	Not present or Type A or Type C
TPMS*1	Present
Keyless entry*2	Not present or Present
SKIM	Type A or Type B
Cruise control	Not present or Present
Corner sensor	Not present
Head light auto leveling device	Not present
Oil level warning	Not present

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Item name	Initial value
Water separate warning	Not present
Speed meter scale	Not used
Idle neutral control	Not used
ENG-CVT unit control	Not used
INVECS control	Not used
Lock-up slip control	Not used
Side air bag	Present
Number of speaker*2	Premium or 6 speakers or 4 speakers
Seat material*2	Fabric or Leather
Auto light control	No/Chg Ng
Front differential	Open
Rear differential	Undefined
Power window type	Type P3 or Type P4
Sunroof type	Not present or Type S4
WCM	Present
OCM	Present
ORC	Present
A/C	Present
AUDIO*2	Not present or Present
AND*3	Not present or Present
VES	Not used
DISP	Not used
NAVI	Not used
CAMERA*3	Not present
TURNER	Not used
Electric Slide door (Left)	Not present
Electric Slide door (Right)	Not present
ETG	Not present
MSMD	Not used
HFM	Not present or Present
ABS	Not present or Present
A.S.C.	Not present
SAS	Not present
AWD	Not present
TCM	Not present or Present

TSB Revision

Item name	Initial value
ACTV_STB	Not used
Pre-Crush	Not used
EPS	Not present
ACDAYC	Not present
Power window Dr	Not present or Present
Power window As	Not present
Power window RR	Not present
Power window RL	Not present
Power window BK	Not used
Sunroof	Not present or Present
RLS*2	Not present
IG key illumination	W/ getting off
Turn signal bulb	21W+21W+5W
Rear wiper	Disabled
Fold mirror	Disabled
Head light	4 beams
Head light washer	Disabled
Front fog light mode	A spec.
Front fog light*2	Not present or Present
Rear fog light*2	Not present/ChgOK
Room light delay timer/door and H/L	Long
Room light by H/L	Full
Gate/Trunk light	Mode-1 (trunk)
Headlight auto cut mode	C-spec
Headlight auto cut	Enable
Door lock system	Not present or A-spec (NAS)
Auto door lock/unlock	Disabled
key reminder unlock	A-spec/Dr only or B-spec/Dr and As
Horn type*2	Dual horn
Gate/trunk opener mode	Not present or Present
Cooling fan	Relay control
Security alarm mode	Not present or C-spec (US)
Security alarm function	NotPresent/ChgNg or Present/Chg Ng
Pre-alarm	Not present
Multi mode RKE	Disabled

TSB Revision

Item name	Initial value
Gate/Trunk	Trunk type
Manner switch*2	Not present/ChgNg
Remote engine starter*2	Not present/ChgNg
Panic Alarm	Disabled or Enable
Front wiper	Speed Sensitive
Comfort flasher type	Present/Chg OK
Dome light Center Switch	Not present
Wiper washer check bulb	Present
H/L leveling type	Not present
AFS*1 type	Not present
ARS*1 type	Not present
Compressor type	No compressor or Scroll type 90 cc/rev
Temparature type	Celsius or Fahrenheit
Rear view camera	Not present
Nose view camera	Not present
Side view camera	Not present
Average speed	Available
Language status	English
Fuel amount	Not used
Fuel consumption scale	L/100km or MPG(US)
Speed gauge tolerance	U.S.
Coolant temp gauge threshold	Normal
Frost warning threshold	U.S.
Distance to empty	Available
Average fuel consumption	Available
Instant fuel consumption	Available
Time traveled	Not available
Distance traveled	Not available
Fuel used	Not available
Trip autoreset IG OFF	Available
Variable speed alarm	Not available
Rest reminder	Available
Instant speed	Not available
Seat belt reminder type	Type 1
Seat belt reminder flashing	Available

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Item name	Initial value
Seat belt reminder indicator	D and P independ
Reverse alarm	Not available
Key reminder	Available
Lighting monitor	Available
GCC speed alarm	Not available
Condition tone alarm	Available
Rent-a-car mode always IG-OFF	Available
Rent-a-car mode door open IG-OFF	Available
Service reminder schedule table	NAS 10
ACD control display	Not used
TPMS information	220 kPa
Horn chirp by RKE	Present/ChgOK
Rear S/R unlock output	Not present
Trailer turn detection	present
Lever	Not present
AFS	Not present
SATR	Not present or Present
Fuel tank type	Not used
KOS auto lock customize	Not used
DRL function	Present/Chg OK
FACU	Not present
S AWC control display	Not available
Diesel particulate filter	Not present
Language mode	Not available or Available
WSS	Not present or Present

NOTE:

- *[*1]: TPMS is an abbreviation of Tire Pressure Monitoring System, DRL of Daytime Running Light, AFS of Adaptive Front lighting System, and ARS of Advanced Rear lighting System. However, the systems are not used for this vehicle.*
- *[*2]: The setting can be changed by the option coding. Refer to P.00-41.*
- *[*3]: The item is actually installed to a vehicle, but its initial setting is "Not present." This is because the item does not adapt CAN, and does not indicate abnormal coding data.*

OPTION CODING

Required Special Tools:

- MB991958: Scan Tool (M.U.T.-III Sub Assembly)
  - MB991824: Vehicles Communication Interface (V.C.I.)
  - MB991827: M.U.T.-III USB Cable
  - MB991910: M.U.T.-III Main Harness A (Vehicles with CAN communication system)

⚠ CAUTION

If there is any item indicated by the option coding after equipment change, set ETACS-ECU so that the option coding data corresponds with the equipment content. Functions and systems do not work normally if the setting does not correspond with the equipment.

The ETACS-ECU option coding data can be checked or changed by operating scan tool MB991958.

- How to check option coding data
  1. Connect the scan tool MB991958. Refer to P.00-35.
  2. Turn the ignition switch to the "ON" position.
  3. Select "System select" from the start-up screen.
  4. Select "From 2006 MY" under "Model Year". Check that "Vehicle Information" contents are correct.
  5. Select "ETACS" from "System List", and then press "OK" button.

     NOTE: If "Loading Option Setup" list is shown, click appropriate box.
  6. Select "Coding."
  7. Select "Option Coding Information."
  8. Check the displayed option coding information.
- How to change option coding data
  1. Connect the scan tool MB991958. Refer to P.00-35.
  2. Turn the ignition switch to the "ON" position.
  3. Select "System select" from the start-up screen.
  4. Select "From 2006 MY" under "Model Year". Check that "Vehicle Information" contents are correct.
  5. Select "ETACS" from "System List", and then press "OK" button.

     NOTE: If "Loading Option Setup" list is shown, click appropriate box.
  6. Select "Coding."
  7. Select "Option Coding."
  8. Change to correct option coding data.

LIST

Item name
Auto light control
AUDIO (CAN)
RLS
Number of speaker
Seat material
Front fog light
Rear fog light
Horn type
Manner switch
Remote engine starter
AND
HFM
SATR
Compressor type
DRL function
Wiper washer check bulb

TOWING AND HOISTING

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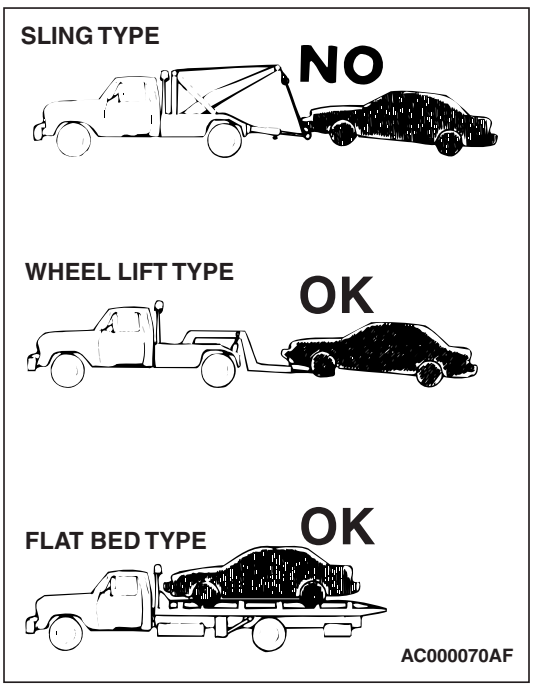
WRECKER TOWING RECOMMENDATION



⚠ CAUTION

This vehicle cannot be towed by a wrecker using sling-type equipment; otherwise the bumper may become deformed. If this vehicle is towed, use wheel lift or flat bed equipment.

FRONT TOWING PICKUP

The vehicle may be towed on its rear wheels for extended distances provided the parking brake is released. It is recommended that vehicles be towed using the front pickup whenever possible.

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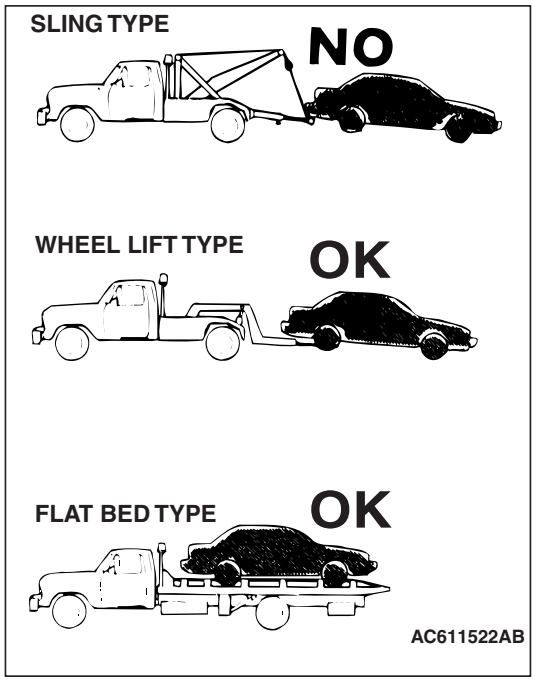


REAR TOWING PICKUP

⚠ CAUTION

- **Do not use the steering column lock to secure the front wheels for towing.**
- **Make sure the transaxle is in Neutral if vehicle will have drive wheels on the ground.**
- **If these requirements cannot be met, the front wheels must be placed on a tow dolly.**

TOWING WHEN KEYS ARE NOT AVAILABLE

When a locked vehicle must be towed and keys are not available, the vehicle may be lifted and towed from the front, provided the parking brake is released. If not released, the rear wheels should be placed on a tow dolly.

SAFETY PRECAUTIONS

The following precautions should be taken when towing the vehicle:

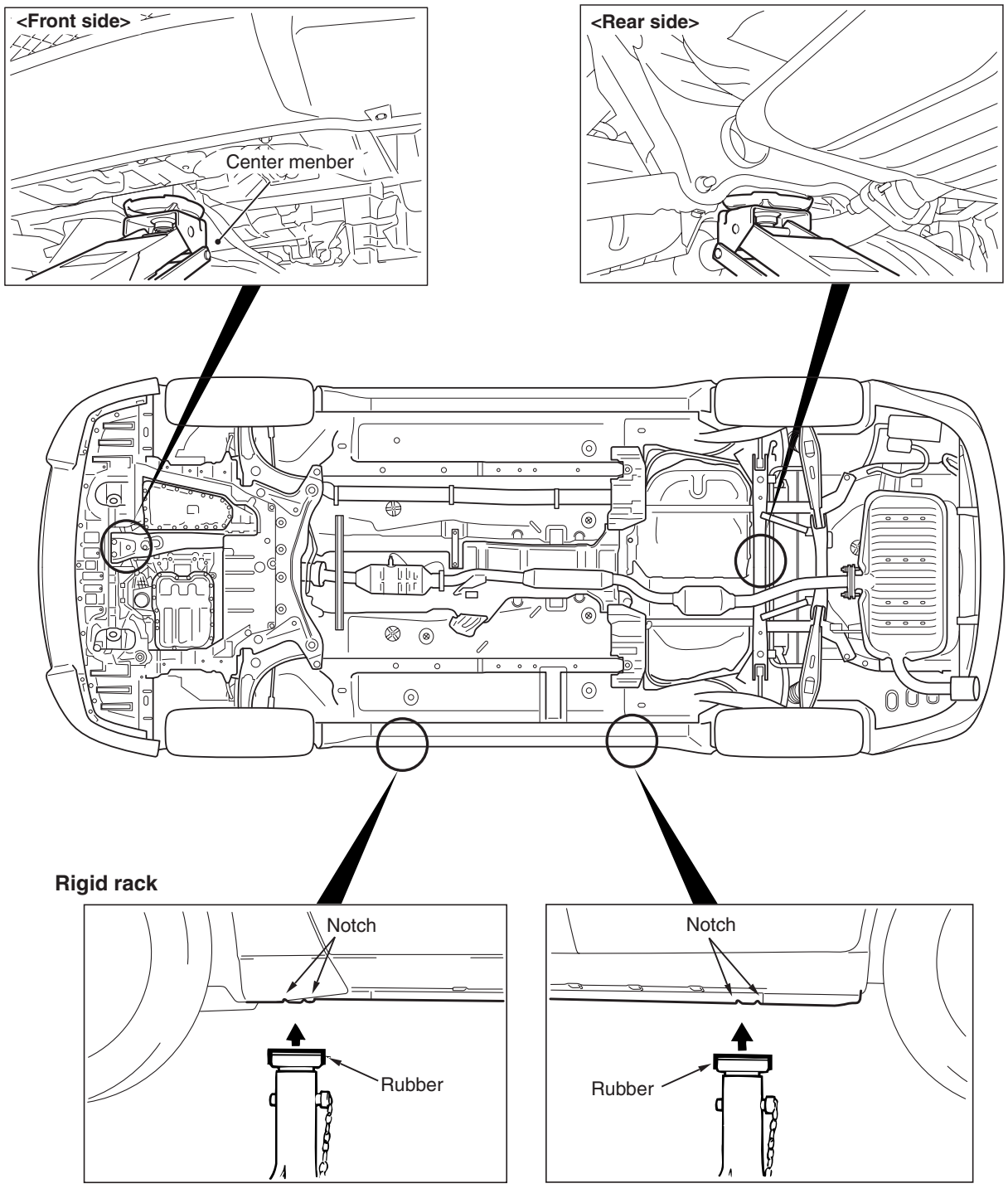
1. Do not lift or tow the vehicle by attaching to or wrapping around the bumper.
2. Any loose, protruding, or damaged parts such as hoods, doors, fenders, trim, etc. should be secured or removed prior to moving the vehicle.
3. Refrain from going under a vehicle when it is lifted by the towing equipment, unless the vehicle is adequately supported by safety stands.
4. Never allow passengers to ride in a towed vehicle.
5. State and local rules and regulations must be followed when towing a vehicle.

LIFTING, JACKING SUPPORT LOCATION

FLOOR JACK

⚠ CAUTION

- **Never place a support at any point other than the specified one, or that point will be deformed.**
- **For lifting, put rubber or similar material between the side sill and rigid rack, otherwise the side sill area will be damaged.**



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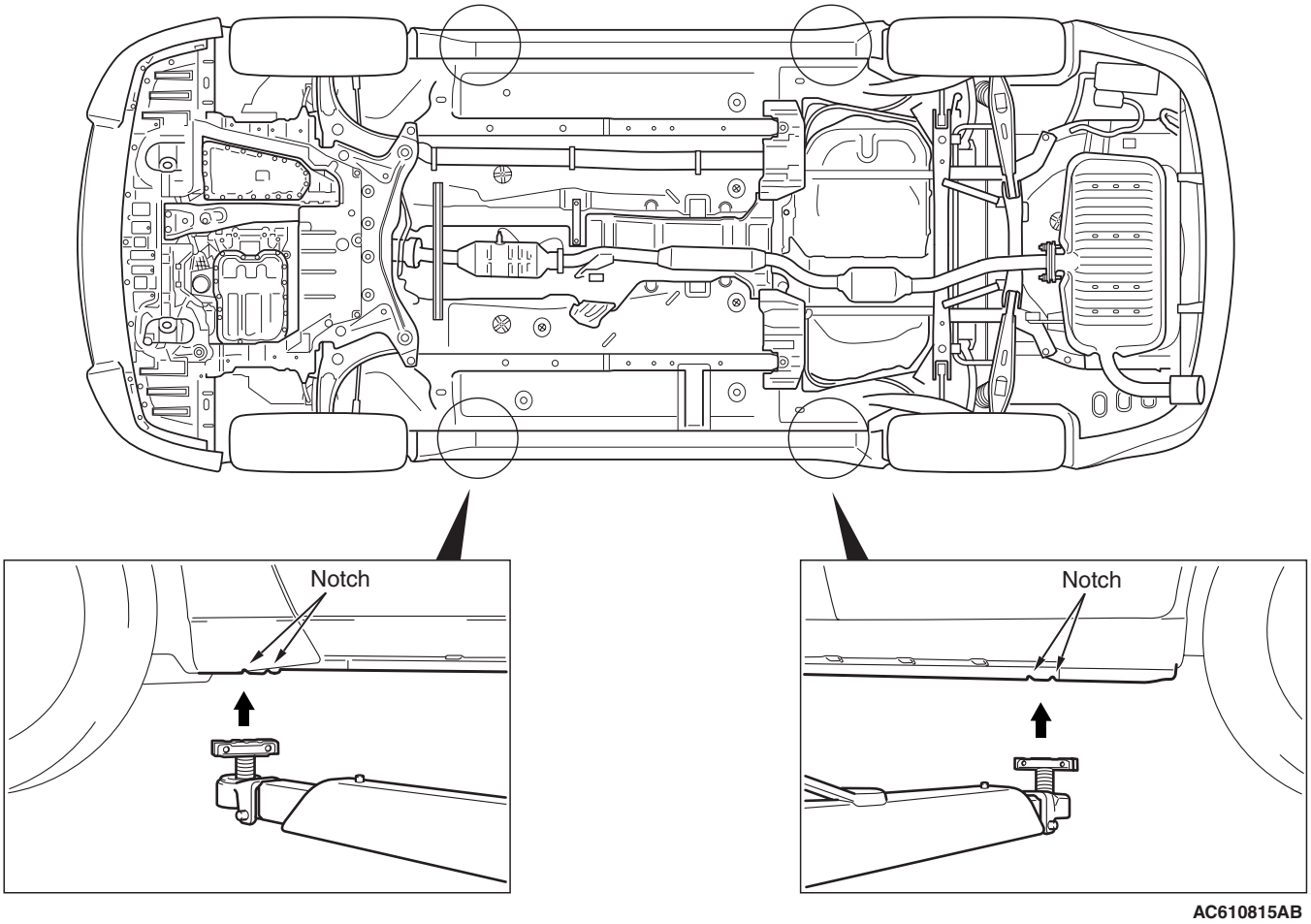
POST TYPE

Special care should be taken when raising the vehicle on a frame contact type hoist. The hoist must be equipped with the proper adapters in order to support the vehicle at the proper locations.

⚠ CAUTION

When service procedures require removing rear suspension, fuel tank and spare tire, place additional weight on the rear end of vehicle, or anchor vehicle to hoist to prevent tipping when the location of the center of gravity changes.



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GENERAL DATA AND SPECIFICATIONS

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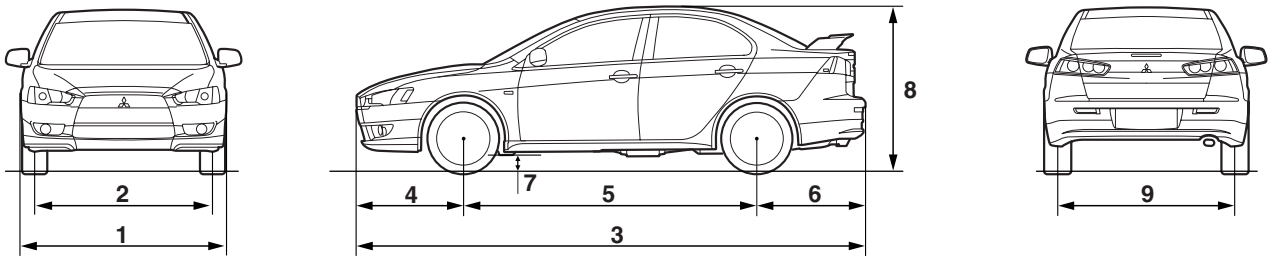
GENERAL SPECIFICATIONS



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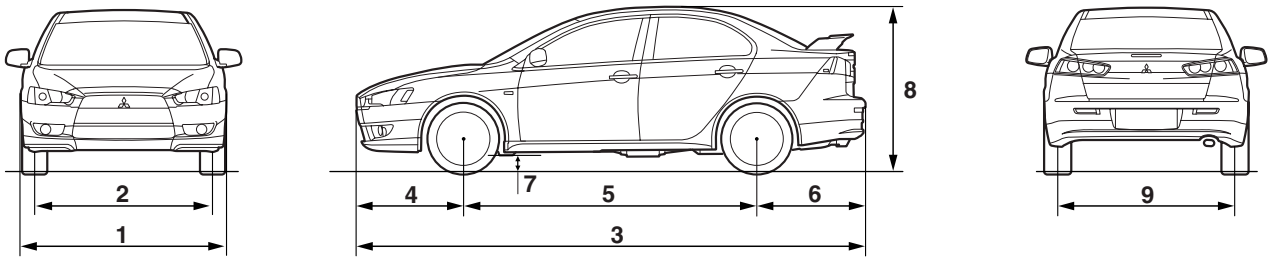
Item			CY4ASNLHL2M/ 3M/7M	CY4ASTLHL2M/ 3M/7M	CY4ASNSHL2M/ 3M/7M
Vehicle dimension mm (in)	Overall width	1	1,760 (69.4)	1,760 (69.4)	1,760 (69.4)
	Tread-front	2	1,530 (60.2)	1,530 (60.2)	1,530 (60.2)
	Overall length	3	4,570 (180.0)	4,570 (180.0)	4,570 (180.0)
	Overhang-front	4	955 (37.6)	955 (37.6)	955 (37.6)
	Wheelbase	5	2,635 (103.7)	2,635 (103.7)	2,635 (103.7)
	Overhang-rear	6	980 (38.7)	980 (38.7)	980 (38.7)
	Ground clearance	7	147 (5.8)	147 (5.8)	147 (5.8)
	Overall height (unladen)	8	1,490 (58.7)	1,490 (58.7)	1,490 (58.7)
	Tread-rear	9	1,530 (60.2)	1,530 (60.2)	1,530 (60.2)
Vehicle weight kg (lb)	Curb weight		1,325 (2,922)	1,360 (2,999)	1,335 (2,944)
	Gross vehicle weight rating		1,850 (4,079)	1,850 (4,079)	1,850 (4,079)
	Gross axle weight rating-front		1,010 (2,227)	1,010 (2,227)	1,010 (2,227)
	Gross axle weight rating-rear		910 (2,007)	910 (2,007)	910 (2,007)
Seating capacity			5	5	5
Engine	Model No.		4B11	4B11	4B11
	Piston displacement cm^3 (cu in)		1,998 (121.9)	1,998 (121.9)	1,998 (121.9)
	Maximum output kW/r/min (HP/r/min)		113/6,000 (152/6,000) <Except California>, 107/6,000 (143/6,000) <California>		
	Maximum torque N· m/r/min (ft-lb/r/min)		198/4,250 (146/4,250) <Except California>, 194/4,250 (143/4,250) <California>		
Fuel system	Fuel supply system		Electronic controlled multiport fuel injection		
Transaxle	Model No.		F5MBB	F1CJA	F5MBB
	Type		5-speed manual	CVT	5-speed manual
Turning radius m (ft)			5.0 (16.4)	5.0 (16.4)	5.0 (16.4)

TSB Revision



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ITEM			CY4ASTSHL2M/3M/7M	CY4ASNXHL2M/3M/7M	CY4ASTXHL2M/3M/7M
Vehicle dimension mm (in)	Overall width	1	1,760 (69.4)	1,760 (69.4)	1,760 (69.4)
	Tread-front	2	1,530 (60.2)	1,530 (60.2)	1,530 (60.2)
	Overall length	3	4,570 (180.0)	4,570 (180.0)	4,570 (180.0)
	Overhang-front	4	955 (37.6)	955 (37.6)	955 (37.6)
	Wheelbase	5	2,635 (103.7)	2,635 (103.7)	2,635 (103.7)
	Overhang-rear	6	980 (38.7)	980 (38.7)	980 (38.7)
	Ground clearance	7	147 (5.8)	147 (5.8)	147 (5.8)
	Overall height (unladen)	8	1,490 (58.7)	1,490 (58.7)	1,490 (58.7)
	Tread-rear	9	1,530 (60.2)	1,530 (60.2)	1,530 (60.2)
Vehicle weight kg (lb)	Curb weight		1,370 (3,021)	1,375 (3,032)	1,410 (3,109)
	Gross vehicle weight rating		1,850 (4,079)	1,850 (4,079)	1,850 (4,079)
	Gross axle weight rating-front		1,010 (2,227)	1,010 (2,227)	1,010 (2,227)
	Gross axle weight rating-rear		910 (2,007)	910 (2,007)	910 (2,007)
Seating capacity			5	5	5
Engine	Model No.		4B11	4B11	4B11
	Piston displacement cm^3 (cu in)		1,998 (121.9)	1,998 (121.9)	1,998 (121.9)
	Maximum output kW/r/min (HP/r/min)		113/6,000 (152/6,000) <Except California>, 107/6,000 (143/6,000) <California>		
	Maximum torque N· m/r/min (ft-lb/r/min)		198/4,250 (146/4,250) <Except California>, 194/4,250 (143/4,250) <California>		
Fuel system	Fuel supply system		Electronic controlled multiport fuel injection		
Transaxle	Model No.		F1CJA	F5MBB	F1CJA
	Type		CVT	5-speed manual	CVT (with sport mode)
Turning radius m (ft)			5.0 (16.4)	5.0 (16.4)	5.0 (16.4)

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TIGHTENING TORQUE

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Each torque value in the table is a standard value for tightening under the following conditions.

1. Bolts, nuts and washers are all made of steel and plated with zinc.
2. The threads and bearing surface of bolts and nuts are all in dry condition.

The values in the table are not applicable:

1. If toothed washers are inserted.
2. If plastic parts are fastened.
3. If bolts are tightened to plastic or die-cast inserted nuts.
4. If self-tapping screws or self-locking nuts are used.

STANDARD BOLT AND NUT TIGHTENING TORQUE

Thread size		Standard tightening torque		
Nominal bolt diameter (mm)	**Pitch (mm)**	**Head mark "4"**	**Head mark "7"**	**Head mark "8"**
M5	0.8	2.5 ±0.5 N· m (23 ±4 in-lb)	5.0 ±1.0 N· m (44 ±9 in-lb)	6.0 ±1.0 N· m (53 ±9 in-lb)
M6	1.0	5.0 ±1.0 N· m (44 ±9 in-lb)	8.5 ±1.5 N· m (76 ±13 in-lb)	10 ±2 N· m (89 ±17 in-lb)
M8	1.25	11 ±2 N· m (98 ±17 in-lb)	20 ±4 N· m (15 ±3 ft-lb)	24 ±4 N· m (18 ±3 ft-lb)
M10	1.25	23 ±4 N· m (17 ±3 ft-lb)	42 ±8 N· m (31 ±6 ft-lb)	53 ±7 N· m (39 ±5 ft-lb)
M12	1.25	42 ±8 N· m (31 ±6 ft-lb)	80 ±10 N· m (59 ±7 ft-lb)	93 ±12 N· m (68 ±9 ft-lb)
M14	1.5	70 ±10 N· m (52 ±7 ft-lb)	130 ±20 N· m (96 ±15 ft-lb)	150 ±20 N· m (111 ±14 ft-lb)
M16	1.5	105 ±15 N· m (78 ±11 ft-lb)	195 ±25 N· m (144 ±18 ft-lb)	230 ±30 N· m (170 ±22 ft-lb)
M18	1.5	150 ±20 N· m (111 ±14 ft-lb)	290 ±40 N· m (214 ±29 ft-lb)	335 ±45 N· m (247 ±33 ft-lb)
M20	1.5	210 ±30 N· m (155 ±22 ft-lb)	400 ±60 N· m (295 ±44 ft-lb)	465 ±65 N· m (343 ±48 ft-lb)
M22	1.5	290 ±40 N· m (214 ±29 ft-lb)	540 ±80 N· m (398 ±59 ft-lb)	630 ±90 N· m (465 ±66 ft-lb)
M24	1.5	375 ±55 N· m (277 ±40 ft-lb)	705 ±105 N· m (520 ± 77 ft-lb)	820 ±120 N· m (605 ± 88 ft-lb)

FLANGE BOLT AND NUT TIGHTENING TORQUE

Thread size		Standard tightening torque		
Nominal bolt diameter (mm)	Pitch (mm)	Head mark "4"	Head mark "7"	Head mark "8"
M6	1.0	5.0 ±1.0 N· m (44 ±9 in-lb)	10 ±2 N· m (89 ±17 in-lb)	12 ±2 N· m (107 ±17 in-lb)
M8	1.25	13 ±2 N· m (111 ±22 in-lb)	24 ±4 N· m (18 ±3 ft-lb)	28 ±5 N· m (20 ±4 ft-lb)
M10	1.25	26 ±5 N· m (19 ±4 ft-lb)	50 ±5 N· m (37 ±4 ft-lb)	58 ±7 N· m (43 ±5 ft-lb)
M10	1.5	25 ±4 N· m (18 ±3 ft-lb)	46 ±8 N· m (34 ±6 ft-lb)	55 ±5 N· m (41 ±3 ft-lb)
M12	1.25	47 ±9 N· m (35 ±6 ft-lb)	93 ±12 N· m (68 ±9 ft-lb)	105 ±15 N· m (78 ±11 ft-lb)
M12	1.75	43 ±8 N· m (32 ±6 ft-lb)	83 ±12 N· m (61 ±9 ft-lb)	98 ±12 N· m (72 ±9 ft-lb)

LUBRICATION AND MAINTENANCE

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Maintenance and lubrication service recommendations have been compiled to provide maximum protection for the vehicle owner's investment against all reasonable types of driving conditions. Since these conditions vary with the individual vehicle owner's driving habits, the area in which the vehicle is operated and the type of driving to which the vehicle is subjected, it is necessary to prescribe lubrication and maintenance service on a time frequency as well as mileage interval basis.
Oils, lubricants and greases are classified and graded according to standards recommended by the Society of Automotive Engineers (SAE), the American Petroleum Institute (API) and the National Lubricating Grease Institute (NLGI).

MAINTENANCE SCHEDULES

Information for service maintenance is provided in the "SCHEDULED MAINTENANCE TABLE." Three schedules are provided; one for "Required Maintenance." one for "General Maintenance" and one for "Severe Usage Service."
The item numbers in "SCHEDULED MAINTENANCE TABLE" correspond to the section numbers in "MAINTENANCE SERVICE."

SEVERE SERVICE

Vehicles operating under severe service conditions will require more frequent service.
Component service information is included for vehicles operating under one or more of the following conditions:

1. Trailer towing or police, taxi or commercial type operation.
2. Operation of Vehicle
   (1) Short-trip operation at freezing temperature (engine not thoroughly warmed up)
   (2) More than 50% operation in heavy city traffic during hot weather above 32° C (90° F)
   (3) Extensive idling
   (4) Driving in sandy areas
   (5) Driving in salty areas
   (6) Driving in dusty conditions
   (7) Driving off-road

ENGINE OIL

⚠ CAUTION

Test results submitted to EPA have shown that laboratory animals develop skin cancer after prolonged contact with used engine oil. Accordingly, the potential exists for humans to develop a number of skin disorders, including cancer, from such exposure to used engine oil. Therefore, when changing engine oil, be careful not to touch it as much as possible. Protective clothing and gloves, that cannot be penetrated by oil, should be worn. The skin should be thoroughly washed with soap and water, or use waterless hand cleaner, to remove any used engine oil. Do not use gasoline, thinners, or solvents.

Either of the following engine oils should be used:
Engine oils displaying ILSAC certification symbol or conforming to the API classification SM.

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For further details, refer to "LUBRICANTS SELECTION."

LUBRICANTS AND GREASES

Semi-solid lubricants bear the NLGI designation and are further classified as grades 0, 1, 2, 3, etc. Whenever "Chassis Lubricant" is specified, Multipurpose Grease, NLGI grade Number 2, should be used.

FUEL USAGE STATEMENT

⚠ CAUTION

Using leaded gasoline in this car will damage the catalytic converters and heated oxygen sensors, and affect the warranty coverage validity.

This vehicle must use unleaded gasoline only.
This vehicle has a fuel filler tube which is especially designed to accept only the smaller-diameter unleaded gasoline dispensing nozzle.

GASOLINE CONTAINING ALCOHOL

Some gasoline sold at service stations contain alcohol although they may not be so identified.
Using fuels containing alcohol is not recommended unless the nature of the blend can be determined as being satisfactory.

Gasohol: A mixture of 10% ethanol (grain alcohol) and 90% unleaded gasoline may be used in your vehicle. If driveability problems are experienced as a result of using gasohol, it is recommended that the vehicle be operated on gasoline.
Methanol: **Do not use gasoline containing methanol (wood alcohol).** Using this type of alcohol can result in vehicle performance deterioration and damage critical parts in the fuel system components. Fuel system damage and performance problems resulting from the use of gasoline containing methanol may not be covered by the new vehicle warranty.

GASOLINE CONTAINING METHYL TERTIARY BUTYL ETHER (MTBE)

Unleaded gasoline containing 15% or less MTBE may be used in your vehicle. (Fuel containing MTBE over 15% in volume may cause reduced engine performance and produce vapor lock or hard starting.

MATERIALS ADDED TO FUEL

Indiscriminate use of fuel system cleaning agents should be avoided. Many of these materials intended for gum and varnish removal may contain highly active solvents or similar ingredients that can be harmful to gasket and diaphragm materials used in fuel system component parts.

RECOMMENDED LUBRICANTS AND LUBRICANT CAPACITIES TABLE

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RECOMMENDED LUBRICANTS

Lubricant	Specifications	Remarks
Engine oil	Engine oils displaying ILSAC certification symbol or conforming to the API classification SM	For further details, refer to "LUBRICANTS SELECTION" section.
Transaxle oil <M/T>	DiaQueen NEW MULTI GEAR OIL API classification GL-3, SAE 75W-80	-
Transmission fluid <CVT>	DIA QUEEN CVTF-J1	-
Power steering fluid	Genuine Mitsubishi Power Steering Fluid	-
Brakes and clutch	Conforming to Brake fluid DOT 3 or DOT 4	-
Engine coolant	Long Life Antifreeze Coolant or an equivalent	-
Door hinges, back door hinges	Grease	-

LUBRICANT CAPACITY TABLE

Description		Specification
Engine oil dm^3 (qt)	Oil pan (excluding oil filter)	4.0 (4.2)
	Oil filter	0.3 (0.32)
Engine coolant dm^3 (qt)		7.0 (7.4)
Transaxle oil <M/T> dm^3 (qt)		2.5 (2.6)
Transmission fluid <CVT> dm^3 (qt)		7.8 (8.2)
Power steering fluid dm^3 (qt)		1.0 (1.06)
Fuel tank dm^3 (gal)		59.0 (15.5)

LUBRICANT SELECTION

ENGINE OIL

⚠ CAUTION

Never use nondetergent or straight mineral oil.

Use only engine oils displaying the ILSAC certification symbol ("Starburst" symbol) on the container.

ILSAC certification symbol ("Starburst" symbol)

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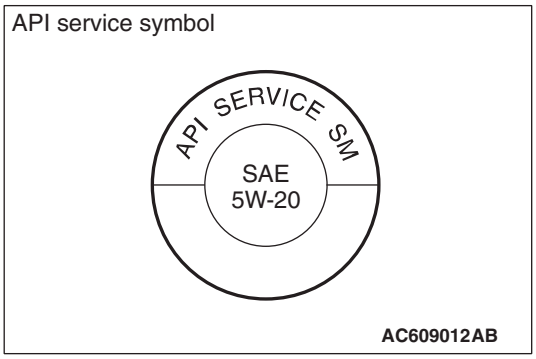
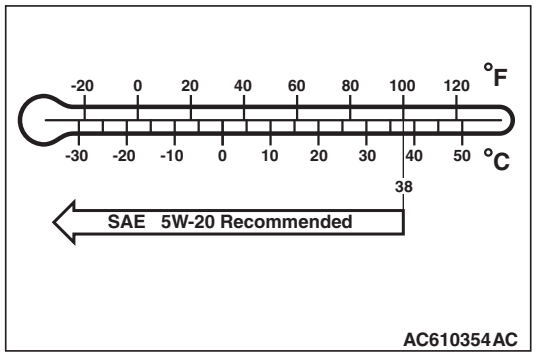


If these oils are not available, an API classification SM or higher can be used.



OIL VISCOSITY

The SAE grade number indicates the viscosity of the oil. A proper SAE grade number should be selected according to ambient temperature.

NOTE: SAE 5W-20 engine oil is strongly recommended for optimum fuel economy and cold starting. SAE 10W-30 may be used when the normal operating temperature is above 38°C (100°F).

SELECTION OF COOLANT

COOLANT

Relationship between Coolant Concentration and Specific Gravity

⚠ CAUTION

- **If the concentration of the coolant is below 30%, the anti-corrosion property will be adversely affected. In addition, if the concentration is above 60%, both the anti-freeze and engine cooling properties will decrease, affecting the engine adversely. For these reasons, be sure to maintain the concentration level within the specified range.**
- **Do not use a mixture of different brands of anti-freeze.**

Coolant temperature °C (°F) and specific gravity					**Freezing temperature**	**safe operating temperature**	**Coolant concentration (Specific volume)**
10 (50)	20 (68)	30 (86)	40 (104)	50 (122)	°C (°F)	°C (°F)	%
1.054	1.050	1.046	1.042	1.036	−16 (3.2)	−11 (12.2)	30
1.063	1.058	1.054	1.049	1.044	−20 (−4)	−15 (5)	35
1.071	1.067	1.062	1.057	1.052	−25 (−13)	−20 (−4)	40
1.079	1.074	1.069	1.064	1.058	−30 (−22)	−25 (−13)	45
1.087	1.082	1.076	1.070	1.064	−36 (−32.8)	−31 (−23.8)	50
1.095	1.090	1.084	1.077	1.070	−42 (−44)	−37 (−35)	55
1.103	1.098	1.092	1.084	1.076	−50 (−58)	−45 (−49)	60

Example
The safe operating temperature is −15° C (5° F) when the specific gravity is 1.058 at the coolant temperature of 20° C (68° F)

SCHEDULED MAINTENANCE TABLE

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SCHEDULED MAINTENANCE SERVICE FOR EMISSION CONTROL AND PROPER VEHICLE PERFORMANCE

Inspection and service should be performed any time if a malfunction is observed or suspected.

No.	Emission control system maintenance	Service intervals	Kilometers in thousands	24	48	72	96	120	144	168	192
			Mileage in thousands	15	30	45	60	75	90	105	120
			Months	12	24	36	48	60	72	84	96
1	Fuel system (tank, pipe line and connection, and fuel tank filler tube cap)	Check for leaks					X				X
2	Fuel hoses	Check condition			X*1		X		X		X
3	Air cleaner element	Replace			X		X		X		X
4	Evaporative emission control system (except evaporative emission canister)	Check for leaks and clogging					X				X
5	Spark plugs	Iridium-tipped type	Replace	Every 84 months or every 168,000 km (105,000 miles)							
6	Intake and exhaust valve clearance	Inspect and adjust					X				X
7	Drive belts (for the generator and power steering oil pump)	Check condition			X		X		X		X
8	Exhaust system (connection portion of muffler, muffler pipes and converter heat shields)	Check and service			X*1		X		X		X

GENERAL MAINTENANCE SERVICE FOR PROPER VEHICLE PERFORMANCE

No.	General maintenance	Service intervals	Kilometers in thousands	24	48	72	96	120	144	168	192
			Mileage in thousands	15	30	45	60	75	90	105	120
			Months	12	24	36	48	60	72	84	96
9	Engine oil	Change		Every 6 months or every 12,000 km (7,500 miles)							
10	Engine oil filter	Replace		Every 6 months or every 12,000 km (7,500 miles)							
11	Transaxle oil <M/T>	Check oil level and condition			X		X		X		X
13	Engine coolant	Change					X at first		X		X
14	Coolant hoses (radiator hose, heater hose)	Inspect			X		X		X		X
15	Disc brake pads, rotors	Inspect for wear		Every 12 months or every 24,000 km (15,000 miles)							
16	Rear drum brake linings and rear wheel cylinders (except vehicles with disc brakes) for all wheels	Inspect for wear and leaks			X		X		X		X
17	Brake hoses	Check for deterioration or leaks		Every 12 months or every 24,000 km (15,000 miles)							
18	Ball joint and steering linkage seals	Inspect for grease leaks and damage			X		X		X		X
19	Drive shaft boots	Inspect for grease leaks and damage		Every 12 months or every 24,000 km (15,000 miles)							
20	Suspension system	Inspect for looseness and damage			X		X		X		X
21	Tires	Rotate		Every 12,000 km (7,500 miles)							
22	Air filter	Replace		Every 18 months or every 24,000 km (15,000 miles)							

NOTE:

- **1: This maintenance is recommended but is not required to maintain the emissions warranty.*

SCHEDULED MAINTENANCE UNDER SEVERE USAGE CONDITIONS

Maintenance should be carried out according to the following table:

NO.	Maintenance item	Service intervals	Kilometers in thousands	24	48	72	96	120	144	168	192
			Mileage in thousands	15	30	45	60	75	90	105	120
			Months	12	24	36	48	60	72	84	96
3	Air cleaner element	Replace		Every 12 months or every 24,000 km (15,000 miles)							
9	Engine oil	Change		Every 3 months or every 6,000 km (3,750 miles)							
10	Engine oil filter	Replace		Every 3 months or every 6,000 km (3,750 miles)							
11	Transaxle oil <M/T>	Change oil			X		X		X		X
12	Transmission fluid <CVT>	Change fluid		X check	X	X check	X	X check	X	X check	X
15	Disc brake pads, rotors	Inspect for wear		Every 6 months or every 12,000 km (7,500 miles)							
16	Rear drum brake linings and rear wheel cylinders (except vehicles with disc brakes) for all wheels	Inspect for wear and leaks		Every 12 months or every 24,000 km (15,000 miles)							
20	Suspension system	Inspect for looseness and damage		Every 6 months or every 12,000 km (7,500 miles)							
22	Air filter	Inspect for clogging		Every 3 months or every 6,000 km (3,570 miles)							
		Replace		Every 6 months or every 12,000 km (7,500 miles)							

Severe usage conditions:

1. Driving on dusty, rough, muddy or salt-spread roads
2. Towing or police, taxi or commercial operation
3. Extensive idling and/or low speed operation
4. Repeated short-trip operation at freezing temperatures (engine not thoroughly warmed up)
5. Extended use of brakes while driving
6. Driving in sandy areas
7. More than 50% operation in heavy city traffic during hot weather above 32° C (90° F)

MAINTENANCE SERVICE

1. FUEL SYSTEM (TANK, PIPE LINE AND CONNECTION, AND FUEL TANK FILLER TUBE CAP) (CHECK FOR LEAKS)

M1001001600141

Check for damage or leakage in the fuel lines and connections.

2. FUEL HOSES (CHECK CONDITION)

M1001001700148

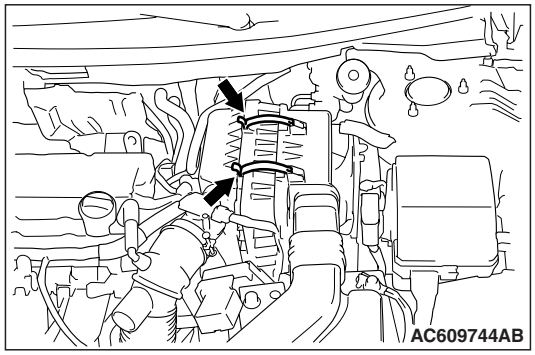
1. Inspect the surface of fuel hoses for heat and mechanical damage. Hard and brittle rubber, cracking, tears, cuts, abrasions and excessive swelling indicate deterioration of the rubber.
2. If the fabric casing of the rubber hose is exposed by cracks and abrasions in the fuel system, the hoses should be replaced.

3. AIR CLEANER ELEMENT (REPLACE)

M1001001800394

The air cleaner element will become dirty during use, reducing its effectiveness. Replace it with a new one.

Replacement of air cleaner element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1. Unclamp the air cleaner housing.
2. Remove the air cleaner element and install a new one.
3. When clamping the air cleaner housing in place, be sure that the cover is completed closed.

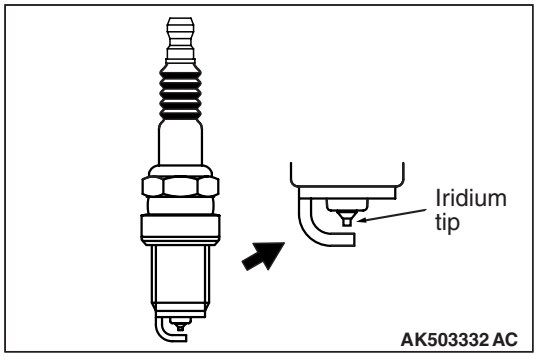
4. EVAPORATIVE EMISSION CONTROL SYSTEM (EXCEPT EVAPORATIVE EMISSION CANISTER) (CHECK FOR LEAKS AND CLOGGING)

M1001001900380

If the fuel-vapor vent line is clogged or damaged, fuel vapor will escape into the atmosphere causing excessive emissions. Disconnect the line at both ends, and blow it clean with compressed air. Remove the fuel tank filler tube cap from the filler tube and check to see if there is evidence that the seal makes improper contact to the filler tube.

5. SPARK PLUGS (REPLACE)

M1001002000454



⚠ CAUTION

Iridium plugs are used. Use care not to damage the iridium tips of the plugs. Do not adjust the spark plug gap.

1. Spark plugs must spark properly to assure proper engine performance and reduce exhaust emission level.
   Therefore, they should be replaced periodically with new ones.
   Spark plug type

MAKER	IDENTIFCATION No.
NGK	FR6EI
DENSO	K20PSR-B8

2. The new plugs should be checked for the proper gap.
   Spark plug gap: 0.7 –0.8 mm (0.028 –0.031 inch)
3. Install the spark plugs and tighten to 25 ±4 N· m (18 ±3 ft-lb).

6. INTAKE AND EXHAUST VALVE CLEARANCE (INSPECT AND ADJUST)

M1001012900135

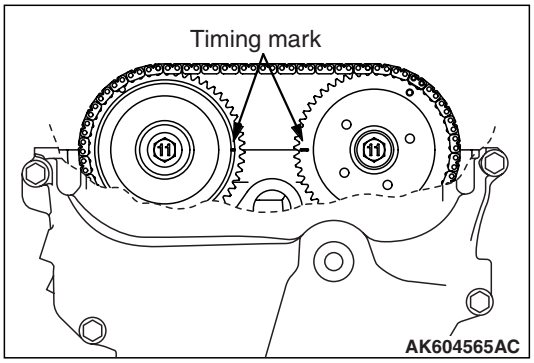
NOTE: Perform the valve clearance check and adjustment at the engine cold state.

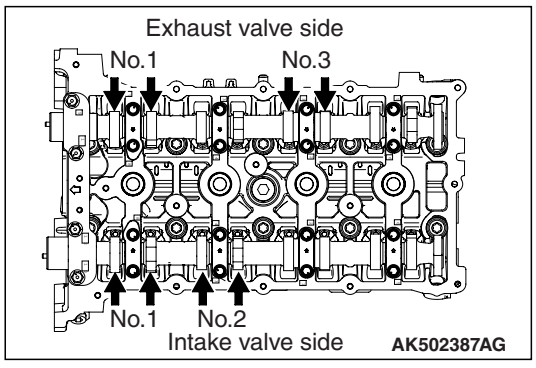
1. Remove all of the ignition coils.
2. Remove the cylinder head cover.

⚠ CAUTION

Turn the crankshaft always clockwise.

3. Turn the crankshaft clockwise, and align the timing mark on the exhaust camshaft sprocket against the upper face of the cylinder head as shown in Figure. Therefore, No.1 cylinder goes to the compression top dead center.





4. Using a thickness gauge, measure the valve clearance with the arrow shown in Figure. If deviated from the standard value, make note for the valve clearance.
   Standard value:
   Intake valve 0.20 ±0.03 mm (0.008 ±0.0012 inch)
   Exhaust valve 0.30 ±0.03 mm (0.012 ±0.0012 inch)

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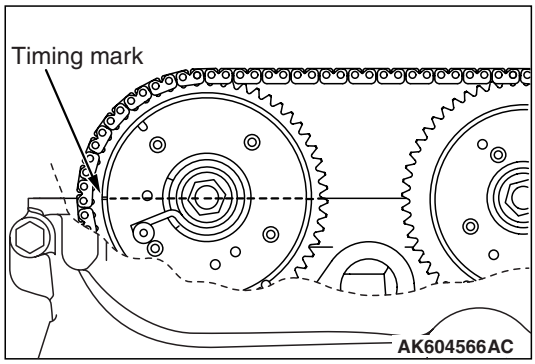
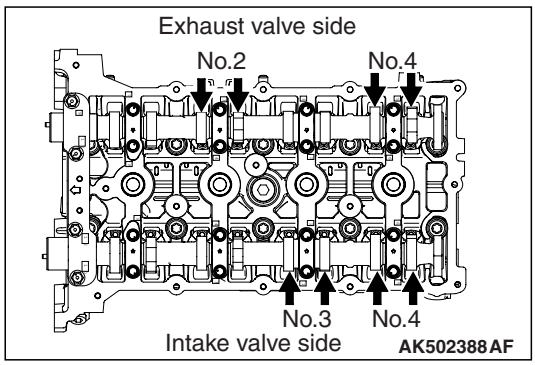
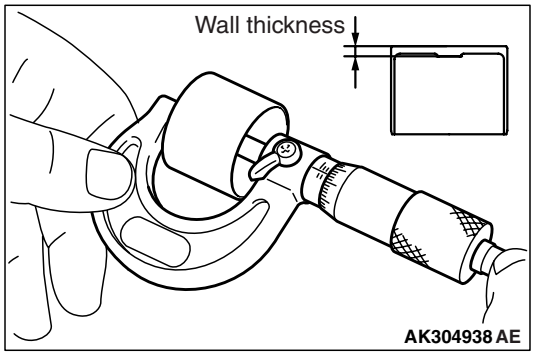


5. Turn the crankshaft clockwise 360 degrees, and put the timing mark on the exhaust camshaft sprocket in position shown in Figure. Therefore, No.4 cylinder goes to the compression top dead center.



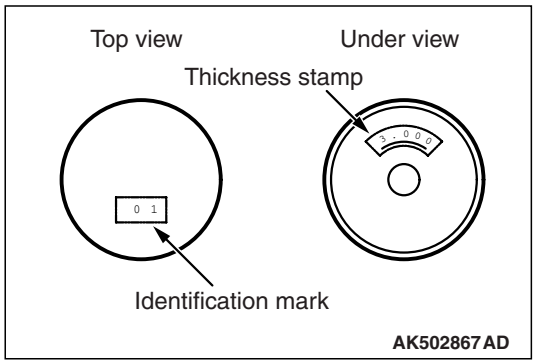
6. Check the valve clearance with the arrow shown in Figure. In the same procedure as 4.
7. If the valve clearance is deviated from the standard value, remove the camshaft and the valve tappet. For the camshaft removal, refer to Camshaft Removal and Installation P.11A-22.



8. Using a micrometer, measure the thickness of the removed valve tappet.
9. Calculate the thickness of the newly installed valve tappet through the following equation.
   A: thickness of newly installed valve tappet
   B: thickness of removed valve tappet
   C: measured valve clearance

   Equation
   Intake valve: A = B + [C –0.20 mm (0.008 inch)]
   Exhaust valve: A = B + [C –0.30 mm (0.012 inch)]

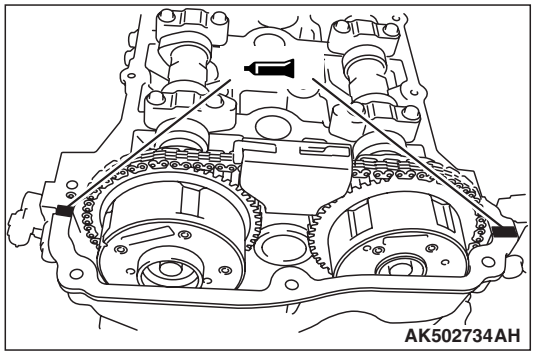
   NOTE: The valve tappet ranges 3,000 –3,690 mm (0.1181 – 0.1453 inch) and has 47 types per 0.015 mm (0.0006 inch). The thickness below a decimal point is stamped on the reverse side of the valve tappet.
10. Install the valve tappet selected through the procedure 9, and put the camshaft in position. For the camshaft installation, refer to Camshaft Removal and Installation P.11A-22.
11. After installing the timing chain, measure the valve clearance using the procedure 3 to 6. Confirm the clearance is within the standard value.
12. After completely removing the liquid gasket sdhering on the timing chain case, cylinder block and cylinder head, degrease them with white gasoline.

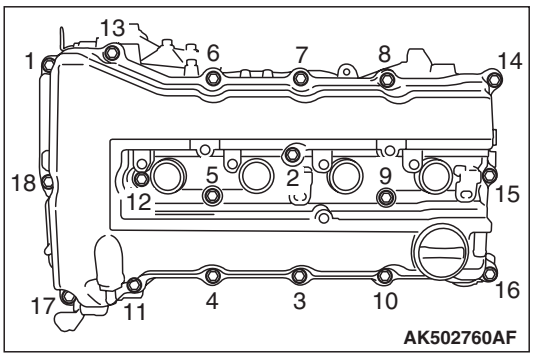


⚠ CAUTION
The cylinder head cover should be installed within 3 minutes of applying liquid gasket.

13.Apply a 4 mm bead of liquid gasket as illustrated.

Specified sealant:
THREE BOND 1217G, LOCTITE 5970, 5971, 5900 or exact equivalent


AK502734AH



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14. Install the cylinder head cover and tighten the tightening bolts using the following procedures.
(1) Temporarily tighten to the following torque in order shown in the illustration.
Tightening torque: 3.0 ±1.0 N· m (27 ±9 in –1b)
(2) Tighten to the specified torque in order shown in the illustration.
Specified torque: 5.5 ±0.5 N· m (49 ±9 in –1b)

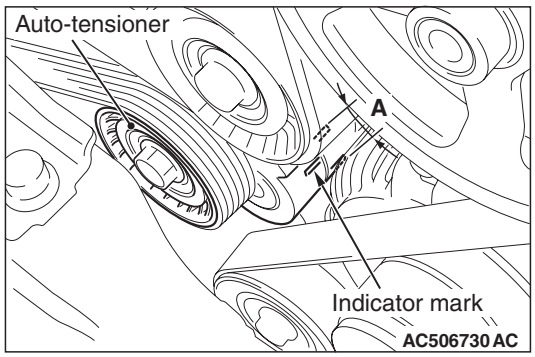
15.Install the ignition coils.

7. DRIVE BELT (FOR THE GENERATOR AND POWER STEERING OIL PUMP) (CHECK CONDITION)

M1001002500556

1. Remove the radiator condenser tank mounting bolts.
2. Move the radiator condenser tank to a place where it will not be a hindrance when checking the drive belt tension.

⚠ CAUTION
Check the drive belt tension after turning the crankshaft clockwise one turn or more.



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3. Make sure that the indicator mark on the auto-tensioner is within the area marked with A in the illustration.
4. If the mark is out of the area, replace the drive belt. (Refer to GROUP 11A –Crankshaft Pulley Removal Installation P.11A-19).
NOTE: The drive belt tension check is not necessary as the auto-tensioner is adopted.
5. Tighten the radiator condenser tank mounting bolts to the specified torque.
Tightening torque: 12 ±2 N· m (102 ±22 in-lb)

8. EXHAUST SYSTEM (CONNECTIONS PORTION OF MUFFLER, MUFFLER PIPES AND CONVERTER HEAT SHIELDS) (CHECK AND SERVICE)

M1001005800426

1. Check for holes and exhaust gas leaks due to damage, corrosion, etc.
2. Check the joints and connections for looseness and exhaust gas leaks.
3. Check the rubber hangers and brackets for damage.

9. ENGINE OIL (CHANGE)

M1001002600597

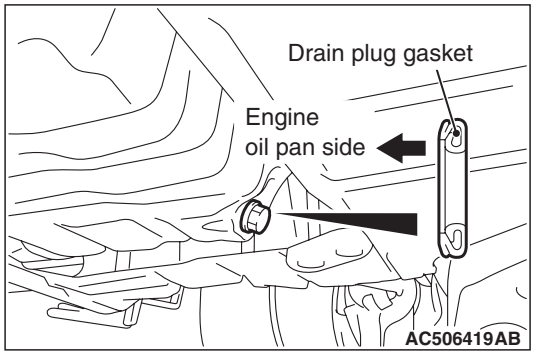
1. Start the engine and allow it to warm up until the temperature of the coolant reaches 80 –90° C (176 –194° F).

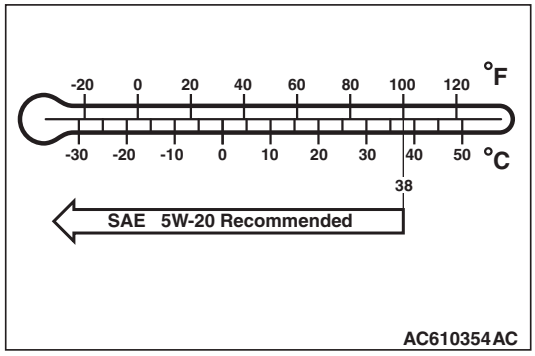
⚠ WARNING

Use care as oil could be hot.

2. Remove the engine oil filler cap.
3. Remove the drain plug to drain oil.
4. Install a new drain plug gasket so that it faces in the direction shown in the illustration, and then tighten the drain plug to the specified torque.

   Tightening torque: 39 ±5 N· m (29 ±3 ft-lb)





5. Refill the specified quantity of oil.

   Specified Engine Oil: Engine oils displaying ILSAC certification symbol ("Starburst" symbol) or conforming to the API classification SM or higher

   Total quantity: 4.3 dm^3 (4.52 quarts)

   NOTE: SAE 5W-20 engine oil is strongly recommended for optimum fuel economy and cold starting. SAE 10W-30 may be used when the normal operating temperature is above 38°C (100°F).

6. Install the engine oil filler cap.
7. Let the engine run for a few minutes.
8. Stop the engine, and then check the oil level using the oil dipstick after a few minutes.

10. ENGINE OIL FILTER (REPLACE)

M1001002700464

The quality of replacement filters varies considerably. Only high quality filters should be used to assure most efficient service. Genuine oil filters require that the filter is capable of withstanding a pressure of 1,765 kPa (256 psi) are high quality filters and are recommended as follows:

Mitsubishi Oil Filter Part Number: MD360935 or equivalent

Engine Oil Filter Selection

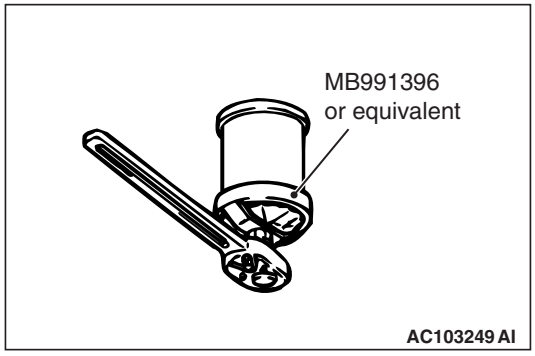
This vehicle is equipped with a full-flow, throw-away oil filter. The same type of filter is recommended as a replacement filter for this vehicle. It is possible, particularly in cold weather, that this vehicle may develop high oil pressure for a short duration. Make sure that any replacement filter used on this vehicle is a high-quality filter. The filter must withstand a pressure of 1,800 kPa (261 psi) [manufacturer's specifications] to avoid filter and ultimately engine damage. The following is a high-quality filter and is strongly recommended for use on this vehicle: Mitsubishi Engine Oil Filter Part number MD360935.
Any replacement oil filter should be installed in accordance with the oil filter manufacturer's installation instructions.

Oil Filter Replacement

1. Start the engine and allow it to warm up until the temperature of the coolant reaches 80 –90° C (176 –194° F)

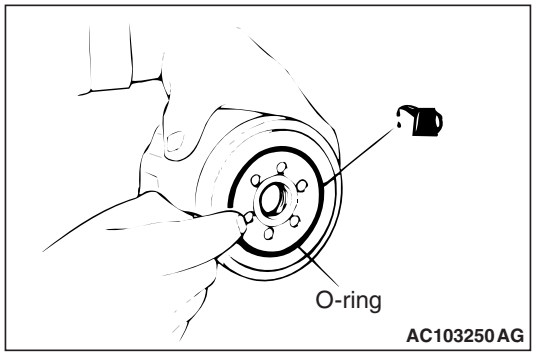
⚠ WARNING
Use care as oil could be hot.

2. Remove the engine oil filler cap.
3. Remove the drain plug to drain oil.
4. Use the respective tool in the following table to remove the engine oil filter.



Number	Special tool
MD360935	Oil filter wrench (MB991396) or equivalent

5. Clean the filter bracket side mounting surface and ensure the old O-ring has been removed.



6. Apply a small amount of engine oil to the O-ring of the new oil filter.
7. Screw on the oil filter by hand until it touches the surface of the flange and then tighten it with an oil filter wrench.

Number	Special tool	Tightening torque
MD360935	MB991396 or equivalent	Approximately 3/4 turn [14 ±2 N· m (124 ±18 in-lb)]

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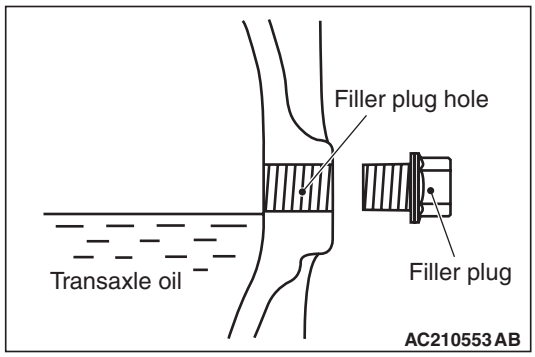
8. Install the drain plug and refill engine oil (Refer to P.12-4).
9. Rev the engine a few times, and check to be sure that no engine oil leaks at the oil filter.

11. TRANSAXLE OIL <M/T> (CHECK OIL LEVEL AND CONDITION)

M1001002800308

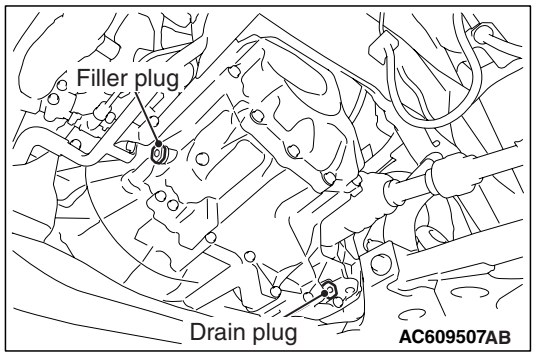
Transaxle oil level check



1. Remove the filler plug.
2. Check that the oil level is up to the lower edge of the filler plug hole.
3. Check that the oil is not noticeably dirty.
4. Tighten the filler plug to the specified torque.

   Tightening torque: 32 ±2 N· m (23 ±2 ft-lb)

Transaxle oil replacement



1. Remove the filler plug.
2. Remove the drain plug and drain the oil.
3. Tighten the drain plug to the specified torque.

   Tightening torque: 32 ±2 N· m (23 ±2 ft-lb)

4. Fill with DiaQueen NEW MULTI GEAR OIL API classification GL-3, SAE 75W-80 until the level comes to the lower portion of filler plug hole.

   Quantity:2.5 dm^3 (2.6 quarts)

5. Tighten the filler plug to the specified torque.

   Tightening torque: 32 ±2 N· m (23 ±2 ft-lb)

12. TRANSMISSION FLUID <CVT> (CHANGE FLUID)

M1001002900491

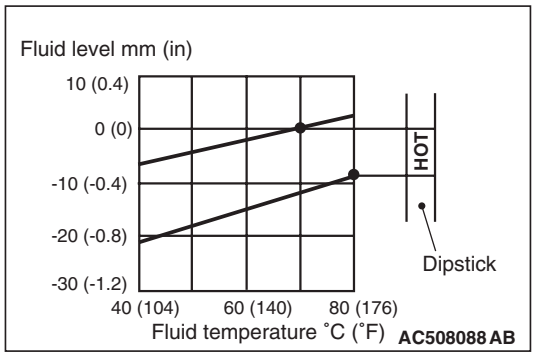
Transmission fluid check

⚠ CAUTION

Replace the transmission fluid whenever the transaxle is replaced with a new one or the vehicle is driven in harsh conditions.

1. Drive the vehicle until the transmission fluid is warmed up to the normal operating temperature 70 –80° C (158 –176° F).

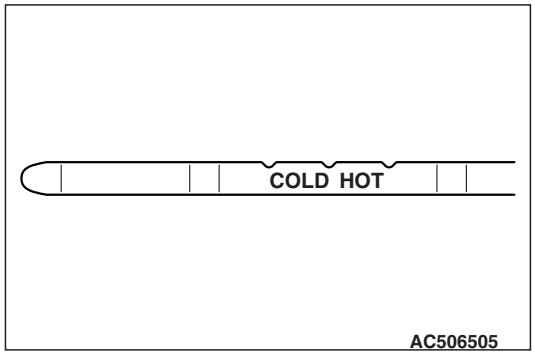
   NOTE: Use M.U.T.-III. to measure the transmission fluid temperature.



NOTE: When a certain amount of time is required to warm up the transmission fluid to the normal operating temperature 70 –80°C (158 –176°F), check the oil level referring to the characteristics chart.

2. Park the vehicle on a level surface.
3. Move the selector lever to every position to fill the torque converter and the hydraulic circuit with the transmission fluid, and then move the selector lever to "P" or "N" range.
4. Wipe clean the area around the dipstick, and then remove the dipstick to check the condition of the transmission fluid.

   NOTE: If the transmission fluid smells burnt or is excessively deteriorated or dirty, the transmission fluid is contaminated with particles of the metal bushings and friction material. In these cases, the transaxle must be overhauled.

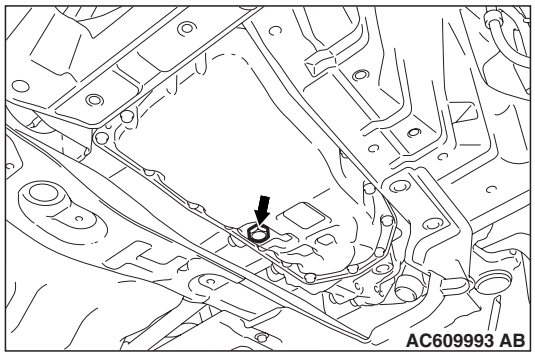


5. Check that the transmission fluid level is within the "HOT" area on the dipstick. If the fluid level is low, add the transmission fluid to the "HOT" level.

   Transmission fluid: DIA QUEEN CVTF-J1

   NOTE: When the transmission fluid level is low, the oil pump sucks air together with the transmission fluid, and produces air bubbles in the hydraulic circuit. The air bubbles in the hydraulic circuit decreases the hydraulic pressure, causing the delayed shift or slippage of the belt, clutch, and brake. When the transmission fluid level is too high, the fluid is stirred by the gear and foams up, and the problems similar to those when the transmission fluid level is low will occur. In either case, air bubbles cause the overheat and oxidation of the transmission fluid, which prevents normal operation of the valve, clutch, and brake. Beside, when the transmission fluid is foamy, it flows out of the transaxle vent hole. This may be taken as the fluid leakage by mistake.
6. Insert the dipstick securely.

Transmission fluid replacement



1. Remove the drain plug on the bottom of the transaxle case to drain the transmission fluid.

   Draining amount: Approximately 6.0 dm^3 (6.3 qt)
2. Install the drain plug with a new gasket to the transaxle case, and tighten it to the specified torque.

   Tightening torque: 34 ±2 N· m (25 ±2 ft-lb)

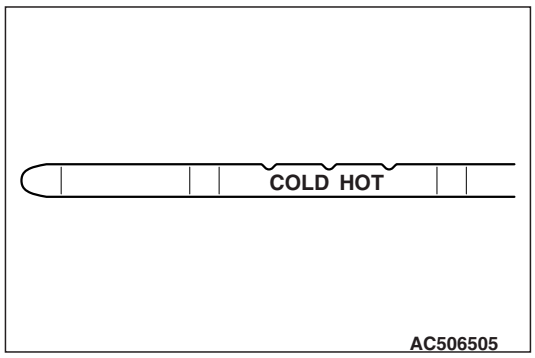
⚠ CAUTION

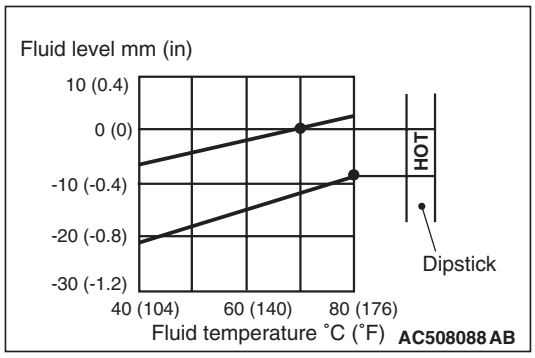
If the transaxle case becomes full before filling 6.0 dm^3 (6.3 qt) of transmission fluid, stop filling the transmission fluid.

3. Fill in the new transmission fluid through the filler tube.

   Filling amount: Approximately 6.0 dm^3 (6.3 qt)

   Transmission fluid: DIA QUEEN CVTF-J1
4. Start up the engine and let it idle for 1 to 2 minutes.
5. Move the selector lever to every position, and then move it to the "P" or "N" range.





6. Stop the engine and perform the above steps 1 to 5 again.
7. Stop the engine, and discharge a small amount of transmission fluid to check for fouling. If fouling is found, repeat steps 1 to 5 until clean transmission fluid comes out.
8. Drive the vehicle until the transmission fluid is warmed up to the normal operating temperature 70 –80° C (158 –176° F), and check the transmission fluid level. It must be within the "HOT" area on the dipstick.

   NOTE: The "COLD" level is for reference only. Use the "HOT" level as the criteria.

   NOTE: Use M.U.T.-III. to measure the transmission fluid temperature.

   NOTE:

   When a certain amount of time is required to warm up the transmission fluid to the normal operating temperature 70 –80°C (158 –176°F), check the fluid level referring to the characteristics chart.
9. Adjust the transmission fluid level to the specified level. Refill the transmission fluid when the fluid level is low, and drain the transmission fluid through the drain plug when the fluid level is high.
10. Securely insert the dipstick into the filler tube.
11. TCM records the deterioration level of the transmission fluid. After replacing the transmission fluid with new one, use M.U.T.-III to reset the deterioration level recorded in TCM.

13. ENGINE COOLANT (CHANGE)

M1001003100539

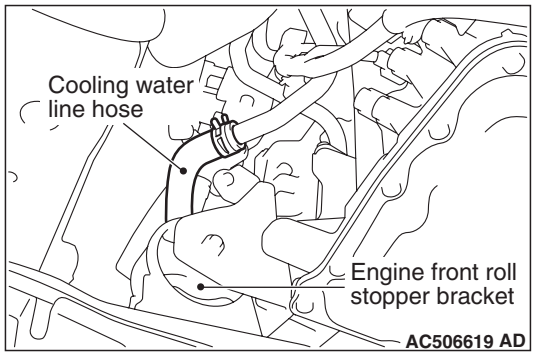
Check the cooling system parts such as the radiator, heater and oil cooler hoses, thermostat and their connections for leakage and damage.

Chang Coolant

⚠ ***WARNING***

When removing the radiator cap, use care to avoid contact with hot coolant or steam. Place a shop towel over the cap and turn the cap anti-clockwise a little to let the pressure escape through the vinyl tube. After relieving the steam pressure, remove the cap by slowly turning it anti-clockwise.

1. Drain the water from the radiator, heater core and engine after unplugging the radiator drain plug and removing the radiator cap.
2. Disconnect the cooling water line hose and drain the coolant in the water jacket.
3. Remove the radiator condenser tank and drain the coolant.
4. Drain the coolant then clean the path of the coolant by injecting water into the radiator from the radiator cap area.
5. Install the cooling water line hose.
6. Securely tighten the drain plug of the radiator.
7. Reinstall the radiator condenser tank.



⚠ **CAUTION**

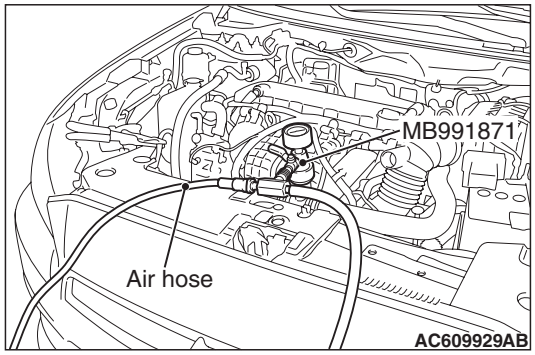
Do not use alcohol or methanol anti-freeze or any engine coolants mixed with alcohol or methanol anti-freeze. The use of an improper anti-freeze can cause corrosion of the aluminum components.

8. By referring to the section on coolant, select an appropriate concentration for safe operating temperature within the range of 30 to 60%. Use special tool MB991871 to refill the engine coolant up to the top of the radiator port. A convenient mixture is a 50% water and 50% antifreeze solution [freezing point: −31° C (−23.8 ° F)].

   Recommended antifreeze: Long Life Antifreeze Coolant or an equivalent

   Quantity: 7.0 dm^3 (7.4 quarts)

   NOTE: For how to use special tool (MB991871), refer to its manufacturer's instructions.



9. Tighten the radiator cap securely.
10. Remove the radiator condenser tank cap, and add the engine coolant up to the "FULL" line.
11. Turn the A/C switch to OFF position to start the engine and warm up until the cooling fan operates.

    NOTE: This work is to open the thermostat fully.
12. Rev the engine several times and then stop it. Check that there are no coolant leaks.
13. Remove the radiator cap with the engine cool, and then refill the engine coolant up to the top of the radiator port.

14.Tighten the radiator cap securely.

⚠ CAUTION
Do not overfill the radiator condenser tank.

15.Remove the radiator condenser tank cap, and add the engine coolant up to the "FULL" line.

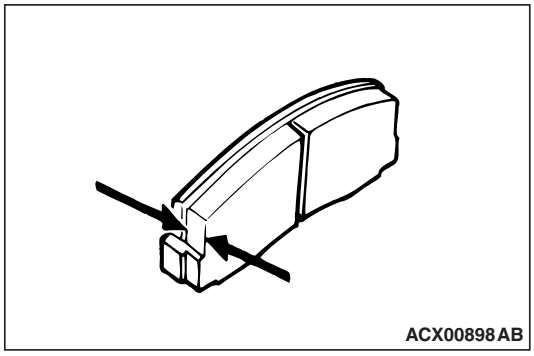
14. COOLANT HOSES (RADIATOR HOSE, HEATER HOSE) [INSPECT]

M1001009700142

Inspect the surface of radiator hoses and heater hoses for heat and mechanical damage. Hard and brittle rubber, cracking, tears, cuts, abrasions and excessive swelling indicate deterioration of the rubber.

15. DISC BRAKE PADS (INSPECT FOR WEAR)

M1001003200417


ACX00898AB

Check for fluid contamination and wear. Replace the complete set of pads if any one pad is defective.

Thickness of lining
Minimum limit: 2.0 mm (0.08 inch)

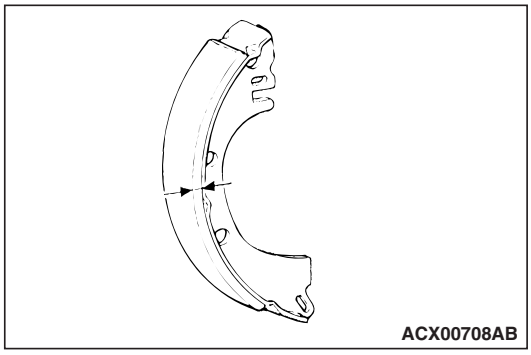
⚠ CAUTION
The pads for the right and left wheels should be replaced at the same time. Never split or intermix brake pad sets. All four pads must be replaced as a complete set.

16. REAR DRUM BRAKE LININGS AND REAR WHEEL CYLINDERS (INSPECT FOR WEAR AND LEAKS)

M1001003300340

1. Remove the brake drum and check the thickness of brake shoe lining for wear, Check the automatic brake adjusting system by hand to see if it operates smoothly. Also see if the gears are in proper mesh with each other. To assure smooth operation, apply a very thin coat of multipurpose grease to the friction surface of the adjuster and link shaft.

⚠ CAUTION friction surface of the adjuster and link shaft.
The shoes for the right and left wheels should be replaced at the same time. Never split or intermix brake shoe sets. All four shoes must be replaced as a complete set.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2. Inspect the wheel cylinder boot for evidence of a brake fluid leak. Visually check the boot for cuts, tears or heat cracks. (A slight amount of fluid on the boot may not be a leak, but may be preservative fluid used at assembly.) Check the brake shoes for wear.

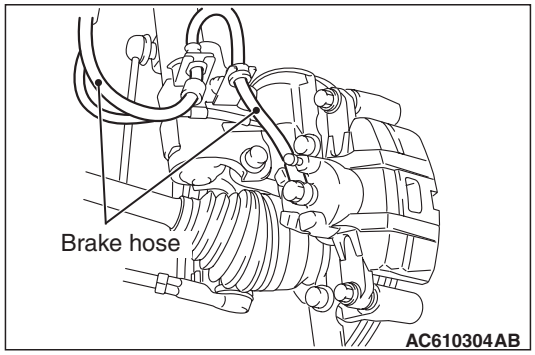
Thickness of lining
Minimum limit: 1.0 mm (0.04 inch)

17. BRAKE HOSES (CHECK FOR DETERIORATION OR LEAKS)

M1001003400455

Inspection of brake hoses should be included in all brake service operations.
The hoses should be checked for:

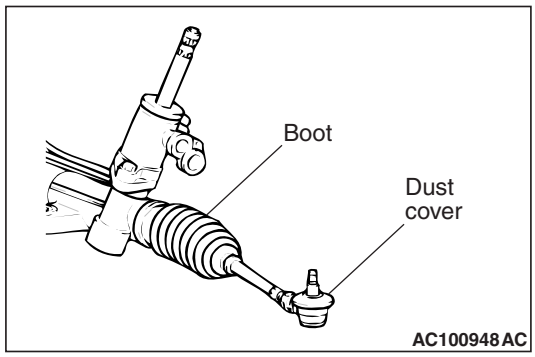
1. Incorrect length, severe surface cracking, pulling, scuffing or worn spots. (If the fabric casing of the hoses is exposed by cracks or abrasion in the rubber hose cover, the hoses should be replaced. Eventual deterioration of the hose and possible bursting failure may occur).
2. Incorrect installation, twisting or interference with wheel, tire or chassis.



18. BALL JOINT AND STEERING LINKAGE SEALS (INSPECT FOR GREASE LEAKS AND DAMAGE)

M1001003500463

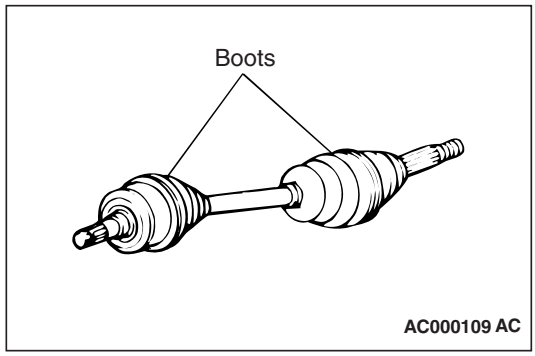
1. These components, which are permanently lubricated at the factory, do not require periodic lubrication. Damaged seals and boots should be replaced to prevent leakage or grease contamination.
2. Inspect the dust cover and boots for proper sealing, leakage and damage, and replace them if defective.



19. DRIVE SHAFT BOOTS (INSPECT FOR GREASE LEAKS AND DAMAGE)

M1001003600460

1. These components, which are permanently lubricated at the factory, do not require periodic lubrication. Damaged seals and boots should be replaced to prevent leakage or grease contamination.
2. Inspect the dust cover and boots for proper sealing, leakage and damage. Replace them if defective.



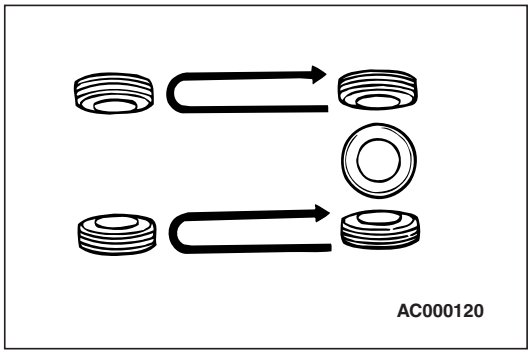
20. SUSPENSION SYSTEM (INSPECT FOR LOOSENESS AND DAMAGE)

M1001009600189

Visually inspect the front/rear suspension components for deterioration and damage. Re-tighten the front/rear suspension components retaining bolts to specified torque.

21. TIRES (ROTATE)

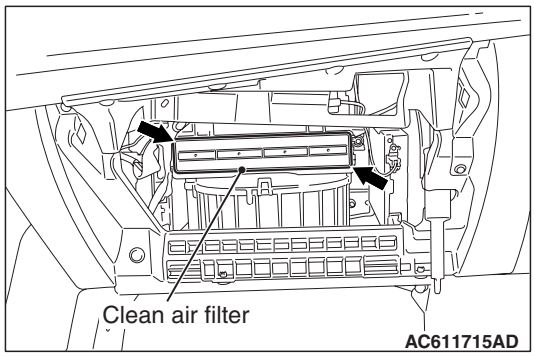
M1001008900488



Rotate tires regularly to equalize tire wear and help extend tire life. Recommended tire rotation is every 12,000 km (7,500 miles).
Timing for the rotation may vary according to vehicle condition, road surface conditions, and individual driver's habits.
When rotating tires, check for uneven wear, damage, and wheel alignment. Abnormal wear is usually caused by incorrect tire pressure, improper wheel alignment, out-of balance wheels, or severe braking.
The first rotation is the most important, to achieve more uniform wear for all tires on the vehicle.

22. AIR FILTER (REPLACE)

M1001009000110



1. Remove the glove box (Refer to GROUP 52A –glove box, P.52A-5).
2. Loosen the two lugs as shown to replace the clean air filter.
3. Install the glove box.

MAIN SEALANT AND ADHESIVE TABLE

M1001003800486

Application		3M™ No.	Loctite®/ permatex®No.
ENGINE AND DRIVETRAIN	Between rocker cover and camshaft bearing cap. Between rocker cover, semicircular packing and cylinder head. Between oil pressure switch and engine.	3M™ AAD Part No. 8672 Ultrapro High Temp. Silicone Gasket or 3M™ AAD Part No. 8679 Black/8678 Black Press-In-Place Silicone gasket strips	Permatex® Ultra Black 598, No.82180
	Between engine coolant temperature switch, engine coolant temperature sensor, thermo valve, thermo switch, joint, engine coolant temperature gauge unit (large-size) and engine	3M™ AAD Part No. 8731 Medium Strength Blue Threadlocker	Loctite®242 Blue Service Tool Removable 24200
	Between oil pan and engine block	3M™ AAD Part No. 8672, 3M™ AAD Part No. 8704 or 3M™ AAD Part No. 8679/8678	Permatex® Ultra Gray 599, No.82194
WEATHERSTRIPPING FOR GLASS	Between tempered glass, body flanges, and weatherstrip	3M™ AAD Part No. 8509 Auto Bedding and Glazing Compound or 3M™ AAD Part No. 8633 Windo-weld Resealant	-
WEATHERSTRIPPING FOR GLASS	Between laminated glass and weatherstrip	3M™ AAD Part No. 8633	-
INTERIORS	Adhesive of vinyl chloride cloth	3M™ AAD Part No. 8088 General Trim Adhesive or 3M™ AAD Part No. 8064 Vinyl Trim Adhesive	Permatex® Vinyl Repair Kit No.81786
	Adhesion of door weatherstrip	3M™ AAD Part No. 8001 (yellow) or 3M™ AAD Part No. 8008 (black) Super Weatherstrip Adhesive or 3M™ AAD Part No. 8011 Black Weatherstrip Adhesive	Permatex® Super Black Weatherstrip Adhesive No.82, 81850
	Sealing of various grommets and packing	3M™ AAD Part No. 8509 or 3M™ AAD Part No. 8678	-
	Adhesion of headliners and various interior decorative materials	3M™ AAD Part No. 8088 General Trim Adhesive or 3M™ AAD Part No. 8090 Super Trim Adhesive	Permatex® Spray Adhesive No.82019

Application		3M™ No.	Loctite®/ permatex®No.
BODY SEALANTS	Sealing of sheet metal joints, drip rail, floor, side panels, trunk, front panel, tail gate hinge	3M™ AAD Part No. 8531 Heavy Drip-Check Sealer (gray) or 3M™ AAD Part No. 8302 Ultrapro Autobody Sealant (clear) or 3M™ AAD Part No. 8361 Urethane A/B Sealant (gray or white)	-
	Miscellaneous body sealants (original mounted w/adhesive tape) • Waterproof door film • Fender panel • Splash shield • Mud guard • Rear combination lamp	3M™ AAD Part No. 8633 Windo-weld Resealant	-
	Fuel Tank and Pad	3M™ AAD Part No. 8088 General Trim Adhesive or 3M™ AAD Part No. 8090 Super Trim Adhesive	Permatex® Spray Adhesive No.82019
CHASSIS SEALANT	Sealant of various flange faces and threaded parts. Packing of fuel gauge unit	3M™ AAD Part No. 8730 High Strength Red Threadlock or 3M™ AAD Part No. 8731 Medium Strength Blue Threadlocker	Loctite®272 High Strength and High Temperature 27200
	Sealing of various threaded parts, dust covers. Differential carrier packing, dust covers and ball joint and linkage. Packing and shims of steering box, sealing of rack support cover and top cover of steering box housing, seal of junction face of knuckle arm flange	3M™ AAD Part No. 8672 Ultrapro High Temp. Silicone Gasket or 3M™ AAD Part No. 8679 (black) or 3M™ AAD Part No. 8678 (black) Press-In-Place Silicone gasket strips 3M™ AAD Part No. 8661 or 3M™ AAD Part No. 8663 Super Silicone sealant	Permatex® The Right Stuff No.25223
	Seal of brake shoe hold down pin and wheel cylinder of drum brakes	3M™ AAD Part No. 8633 Windo-weld Resealant	-

Application		3M™ No.	Loctite®/ permatex®No.
QUICK FIX ADHESIVE	-	3M™ AAD Part No. 8155 Quick Fix Adhesive	Loctite®Quicktite Super Glue 21309
ANAEROBIC STRONG SEALING AGENT	Fixing of various threads, bolts, screws. Fixing of differential drive gear bolt, Connecting of tilt steering bolt. Fan, pulley, gear Sealing of small gaps and flange faces	3M™ AAD Part No. 8730 High Strength Threadlocker or 3M™ AAD Part No. 8731 Medium Strength Threadlocker	Loctite®271, High-Strength Threadlocker 27100 or 27200
UNDER COATING AGENT	-	3M™ AAD Part No. 8883 Rubberized Undercoating Aerosol or 3M™ AAD Part No. 8864 Body Schutz Undercoating (qt)	Permatex® Heavy-Duty Undercoating 81833

NOTES